Draft

Supplemental Environmental Assessment for the Relocation of Three Demolition Sites at the Explosives Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia

Prepared by:

FORT A.P. HILL, VIRGINIA

June 2009

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Supplemental Environmental Assessment for the Relocation of Three Demolition Sites at the Explosives Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia

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ENVIRONMENTAL ASSESSMENT

***LEAD AGENCY*:** Fort A.P. Hill, Virginia

TITLE OF PROPOSED ACTION: Supplemental Environmental Assessment for the Relocation of Three Demolition Sites at the Explosives Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia

***AFFECTED JURISDICTIONS*:** Caroline County, Virginia, and Essex County, Virginia

***PREPARED BY*:** Fort A.P. Hill Environmental Division, Fort A.P. Hill, Virginia

***APPROVED BY*:** Lieutenant Colonel Michael S. Graese, U.S. Army, Installation Commander, Fort A.P. Hill, Virginia

ABSTRACT: This Supplemental Environmental Assessment (SEA) considers the proposed action to relocate three demolition sites at the designed Explosives Ordnance Disposal (EOD) field training area evaluated in the *Final Environmental Assessment of Constructing and Operating an Explosives Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia* (July 2008) and the *Final Environmental Impact Statement: Implementation of Base Realignment and Closure (BRAC) Recommendations and Other Army Actions at Fort Lee, Virginia, and Fort A.P. Hill, Virginia* (February 2007), to an already existing demolition range at Fort A.P. Hill, Virginia. The SEA identifies, evaluates, and documents the environmental and socioeconomic effects of the relocation of the three demolition sites. A No Action Alternative is also evaluated. Implementation of the proposed action is not expected to result in significant environmental impacts. Therefore, preparation of an Environmental Impact Statement is not required and a Finding of No Significant Impact (FNSI) will be published in accordance with the National Environmental Policy Act.

REVIEW COMMENT DEADLINE: The draft SEA and FNSI are available for review and comment for 30 days from publication of the FNSI. The FNSI was published in the *Caroline Progress* and *Fredericksburg Freelance Star*. Copies of the SEA and draft FNSI can be obtained by contacting Ms. Terry Banks, Chief, Environmental Division, at 804-633-8223, or by e-mail requests to terry.banks1@us.army.mil. Copies of the draft SEA and draft FNSI are available for review at the Directorate of Public Works Building 1220, Fort A.P. Hill, Virginia. Comments on the draft SEA and draft FNSI should be submitted to Ms. Banks no later than the end of the public comment period.

Executive Summary

ES.1 Introduction

On September 8, 2005, the Defense Base Closure and Realignment Commission (BRAC Commission) recommended numerous realignment and closure actions for domestic military installations. President Bush concurred with the 2005 BRAC Commission's report and sent it to Congress on September 15, 2005. On November 9, 2005, the recommendations became law, which must be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510, as amended).

The Army evaluated realignment of Fort Lee in its *Final Environmental Impact Statement: Implementation of Base Realignment and Closure (BRAC) Recommendations and Other Army Actions at Fort Lee, Virginia, and Fort A.P. Hill, Virginia*. On May 11, 2007, the Army issued its Record of Decision (ROD) to relocate approximately 7,200 personnel to Fort Lee, to construct and renovate facilities at Fort Lee and Fort A.P. Hill (FAPH), and to conduct operations and training at Fort Lee and FAPH.

Among the facilities projects evaluated in the environmental impact statement (EIS) was establishing an explosives ordnance disposal (EOD) field training area that would cover approximately 1,034 acres at FAPH. Since publication of the ROD, ongoing planning by the Army revealed the need for additional area in the EOD project site. The *Final Environmental Assessment of Constructing and Operating an Explosives Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia* (July 2008) evaluates the Army's proposal for expanding the planned EOD field training area by adding an additional 1,025 acres resulting in the construction and operation of a contiguous EOD field training area of approximately 2,059 acres.

This supplemental environmental assessment (SEA) evaluates the potential environmental and socioeconomic effects of the proposed action to relocate three demolition sites at the designed Explosives Ordnance Disposal (EOD) field training area to an already existing demolition range at Fort A.P. Hill, Virginia.

ES.2 Proposed Action and Alternatives

The Army proposes to relocate three large demolition sites (hereafter referred to as D1, D2 and D3 respectively) originally planned for the 2,059 acre EOD field training area within Training Areas 26, 27 and 28 of Fort A.P. Hill. These three demolition sites would be used for basic demolition training, energetic tools training, and protective works training. Training at these sites would involve detonations up to 50 lbs net explosive weight (NEW). The land dedicated for the EOD field training area will remain unchanged, only the use will change.

The area of Fort A.P. Hill with respect to the proposed action is a combined 42-acre footprint tract of land in and around Demolition Site 70A (DS 70A), an already existing demolition range within the Restricted Area of the installation. It is anticipated that of the 42 acres in the proposed EOD demolition site area, about 23 acres of land would be cleared for an access road and for a demolition pit and bunker for D1. Sites D2 and D3 are already cleared and operating as live-fire ranges.

Demolition site 70A is currently operated by the United States Navy, Naval Surface Warfare Center, Indian Head Division (NSWC-IHD). The footprint of the existing DS70A is large enough to accommodate all three large demolition areas, D1, D2 and D3 proposed for construction at the EOD field training area. With the implementation of the proposed action, NSWC-IHD would no longer be able to use DS 70A due to the fact that the range would be needed for the construction and year-round,

unrestricted operation of the EOD school. The NSWC-IHD would need to find another suitable location to accommodate their training.

Inclusion of the No Action Alternative is prescribed by Council on Environmental Quality regulations and serves as the benchmark against which federal actions can be evaluated. Under the No Action Alternative, EOD demolition training would be conducted on ranges constructed within an area of about 2,059 acres in the eastern portion of the installation in Training Areas 26, 27 and 28. The structures and facilities described in the July 2008 EA would remain within these training areas. The United States Navy, Naval Surface Warfare Center, Indian Head Division (NSWC-IHD) would continue operating the DS 70A range. The No Action Alternative is evaluated in detail in this SEA.

ES.3 Environmental Consequences

Implementing the proposed action would be expected to result in a mixture of short- and long-term minor adverse and short- and long-term minor beneficial effects on the environmental resources and conditions. The SEA does not identify the need for any mitigation measures.

For each resource area, the predicted effects from both the proposed action and the No Action Alternative are summarized in Table ES-1.

Table ES-1
Summary of Potential Environmental and Socioeconomic Consequences

	Environmental and socioeconomic effects of alternatives	
Resource	**Proposed Action**	**No Action**
Land use	No effects	Long-term minor adverse
Aesthetic and visual resources	No effects	No effects
Air quality	Short- and long-term minor adverse	Short- and long-term minor adverse
Noise	Short- term minor adverse and long-term minor beneficial	Short- and long-term minor adverse
Geology and soils	Short- and long-term minor adverse	Short- and long-term minor adverse
Water resources		
• Surface water	Short-term minor and long-term negligible adverse	Short-term minor and long-term negligible adverse
• Hydrogeology/Groundwater	Long-term negligible adverse	Long-term negligible adverse
• Floodplains and Wetlands	Long-term minor adverse	Long-term minor adverse
• Coastal zone management	No effects	No effects
Biological resources	Long-term minor adverse	Long-term minor adverse
Cultural resources	No effects	No effects
Socioeconomics		
• Economic Development	Short- and long-term minor beneficial	Short- and long-term minor beneficial
• Housing	No effects	No effects
• Public services	Long-term minor adverse	Long-term minor adverse
• Schools, family services	No effects	No effects
• Environmental justice	No effects	No effects
• Protection of children	No effects	No effects
Transportation	Short- and long-term minor adverse	Short-term minor and long-term major adverse
Utilities	Short- and long-term minor beneficial and adverse	Short- and long-term minor beneficial and adverse

Table ES-1
Summary of Potential Environmental and Socioeconomic Consequences

	Environmental and socioeconomic effects of alternatives	
Resource	**Proposed Action**	**No Action**
Hazardous and toxic substances	Short-term negligible and long-term minor adverse	Short-term negligible and long-term minor adverse

ES.4 Conclusions

On the basis of the analyses performed in this SEA, implementation of the proposed action would have no significant direct, indirect, or cumulative effects on the quality of the natural or human environment. Preparation of an environmental impact statement is not required. Issuance of a Finding of No Significant Impact would be appropriate.

SECTION 1.0
PURPOSE, NEED AND SCOPE

1.1 Introduction

On September 8, 2005, the Defense Base Closure and Realignment Commission (BRAC Commission) recommended numerous realignment and closure actions for domestic military installations. President Bush concurred with the 2005 BRAC Commission's report and sent it to Congress on September 15, 2005. On November 9, 2005, the recommendations became law, and they must be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510, as amended).

The Army evaluated realignment of Fort Lee in its *Final Environmental Impact Statement: Implementation of Base Realignment and Closure (BRAC) Recommendations and Other Army Actions at Fort Lee, Virginia, and Fort A.P. Hill, Virginia*. On May 11, 2007, the Army issued its Record of Decision (ROD) to relocate approximately 7,200 personnel to Fort Lee, to construct and renovate facilities at Fort Lee and Fort A.P. Hill (FAPH), and to conduct operations and training at Fort Lee and FAPH.

Among the facilities projects evaluated in the environmental impact statement (EIS) was establishing an explosives ordnance disposal (EOD) field training area that would cover approximately 1,034 acres at FAPH. Since publication of the ROD, ongoing planning by the Army revealed the need for additional area in the EOD project site. The *Final Environmental Assessment of Constructing and Operating an Explosives Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia* (July 2008) evaluates the Army's proposal for expanding the planned EOD field training area by adding an additional 1,025 acres resulting in the construction and operation of a contiguous EOD field training area of approximately 2,059 acres.

This supplemental environmental assessment (SEA) evaluates the potential environmental and socioeconomic effects of the proposed action to relocate three demolition sites at the Explosives Ordnance Disposal (EOD) field training area to an already existing demolition range at Fort A.P. Hill, Virginia.

1.2 Purpose and Need

The Army proposes to relocate the three large demolition sites (hereafter referred to as D1, D2 and D3 respectively) originally included in the 2,059 acre EOD field training area within Training Areas 26, 27 and 28 of Fort A.P. Hill. These three demolition sites would be relocated to demolition site 70A (DS 70A), an already existing demolition range within the restricted area at Fort A.P. Hill, Virginia. The land dedicated for the EOD field training area will remain unchanged, only the use will change.

Demolition site 70A is currently operated by the United States Navy, Naval Surface Warfare Center, Indian Head Division and is used for experimental demolition testing, training and research. The footprint of the existing DS70A is large enough to accommodate all three demolition sites (D1, D2 & D3) proposed for construction at the EOD field training area.

The purpose of the proposed action is to provide unrestricted access to the proposed Battle Area Complex (BAX) while providing unconstrained training for the EOD field training area. During initial design meetings for the construction of the EOD field training area, personnel from Redstone Arsenal EOD expressed concern over potential conflicts with EOD operations and access to the proposed BAX facility.

The BAX facility will be located in Training Area 28, with access available solely through the proposed EOD field training site. If access to the BAX is constrained, there could be negative impacts to the training mission at Fort A.P. Hill.

1.3 Scope

This SEA identifies, documents, and evaluates the environmental effects of relocation activities in accordance with the National Environmental Policy Act of 1969 (NEPA) and implements regulations issued by the President's Council on Environmental Quality (CEQ) and the Army.[1] The purpose of the SEA is to inform decision makers and the public of the likely environmental consequences of the proposed action and alternatives.

The Defense Base Closure and Realignment Act of 1990 specifies that NEPA does not apply to actions of the President, the Commission, or the Department of Defense (DoD), except "(i) during the process of property disposal, and (ii) during the process of relocating functions from a military installation being closed or realigned to another military installation after the receiving installation has been selected but before the functions are relocated" (Public Law 101-510, as amended, Sec. 2905(c)(2)(A)). The law further specifies that in applying the provisions of NEPA to the process, the Secretary of Defense and the secretaries of the military departments concerned do not have to consider "(i) the need for closing or realigning the military installation which has been recommended for closure or realignment by the Commission, (ii) the need for transferring functions to any military installation which has been selected as the receiving installation, or (iii) military installations alternative to those recommended or selected" (Sec. 2905(c)(2)(B)). The BRAC Commission's deliberation and decision, as well as the need for closing or realigning a military installation, are exempt from NEPA. Accordingly, this SEA does not address the need for realignment.

The BRAC EIS and related ROD will establish a 1,034-acre EOD field training area at Fort A.P. Hill. A subsequent EA and related FNSI was completed to construct and operate an EOD field training area in its entirety—the original 1,034 acres plus an additional 1,025 acres (a total of 2,059 contiguous acres).

This SEA evaluates the potential environmental and socioeconomic effects of relocating three demolition sites described in the EA to an already established demolition range within the Restricted Area of Fort A.P. Hill.

1.4 Public Involvement

The Army promotes public participation in the NEPA process. Consideration of the views and information of all interested persons and entities promotes open communication and enables better decision-making. All agencies, organizations, and members of the public having a potential interest in the proposed action, including minority, low-income, disadvantaged, and Native American groups, are urged to participate in the decision-making process.

Public participation opportunities with respect to this SEA and decision-making on the proposed action are guided by Title 32 of the *Code of Federal Regulations* (CFR) Part 651. Upon completion, the SEA, along with a draft Finding of No Significant Impact (FNSI), will be made available to the public for 30 days. At the end of the 30-day public review period, the Army will consider any comments submitted by

[1] *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*, Title 40 of the Code of Federal Regulations (CFR) Parts 1500–1508, and Environmental Analysis of Army Actions, 32 CFR Part 651.

individuals, agencies, or organizations on the proposed action, the SEA, or the draft FNSI. As appropriate, the Army may then execute the FNSI and proceed with implementing the proposed action. If it is determined before a final FNSI is issued that implementation of the proposed action would result in significant impacts, the Army will publish in the *Federal Register* a notice of intent to prepare an EIS, commit to mitigation actions sufficient to reduce impacts to below significant levels, or not take the action.

Throughout this process, the public may obtain information on the status of the proposed action and the SEA through Fort A.P. Hill by calling Ms. Terry Banks, Chief, Environmental Division, at 804-633-8255.

1.5 Impact Analysis Performed

An interdisciplinary team of environmental professionals has analyzed the proposed action and alternatives in light of existing conditions and has identified relevant beneficial and adverse effects associated with the action. The resources addressed in this SEA are land use, visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomic resources, transportation, utilities, and hazardous and toxic materials.

SECTION 2.0
PROPOSED ACTION AND ALTERNATIVES

2.1 Introduction

As a result of BRAC Commission recommendations, EOD training must relocate from Redstone Arsenal, Alabama, to Fort Lee and Fort A.P. Hill, Virginia. The Army proposed to accommodate EOD field training requirements at a new 1,034 acre field training area at Fort A.P. Hill in a February 2007 BRAC EIS.

A July 2008 subsequent EA describes the Army's proposal for expanding the planned EOD field training area by adding an additional 1,025 acres resulting in the construction and operation of a contiguous EOD field training area of approximately 2,059 acres (Figure 2-1).

2.2 Proposed Action

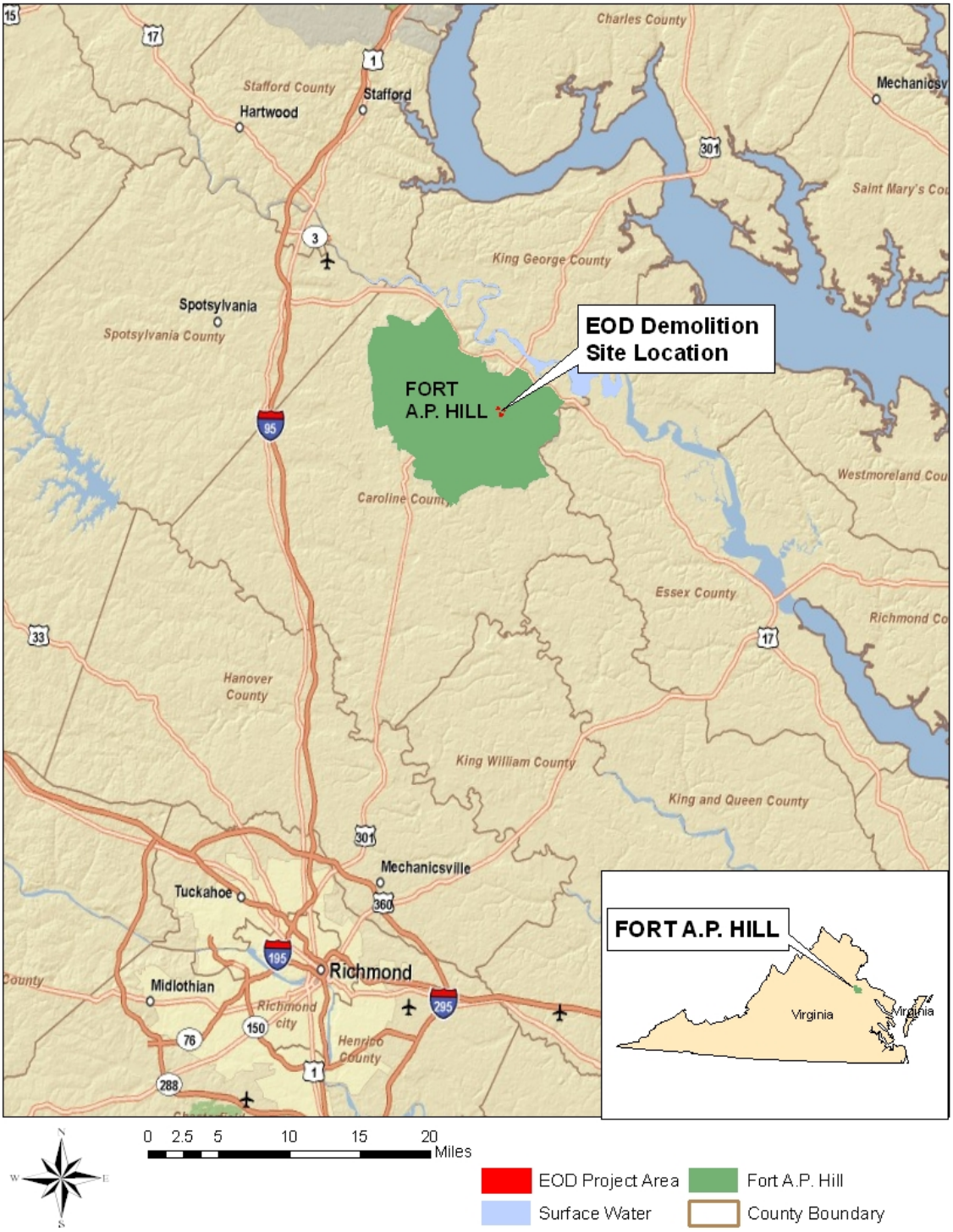
The Army proposes to relocate three large demolition sites (D1, D2 and D3) originally planned for the 2,059-acre EOD field training area within Training Areas 26, 27 and 28 of Fort A.P. Hill. These three demolition sites would be used for basic demolition training, energetic tools training, and protective works training. Training at these sites would involve detonations up to 50 lbs net explosive weight (NEW). The land dedicated for the EOD field training area will remain unchanged, only the use will change.

The area of Fort A.P. Hill with respect to the proposed action is a combined 42-acre footprint tract of land in and around Demolition Site 70A (DS 70A), which is an already existing demolition range within the restricted area of the installation. It is anticipated that of the 42 acres in the proposed EOD demolition site area, about 23 acres of land at D1 would be cleared for an access road and for a demolition range and bunker. Sites D2 and D3 are already cleared and operating as live-fire ranges.

Demolition site 70A is currently operated by the United States Navy, Naval Surface Warfare Center, Indian Head Division (NSWC-IHD). The footprint of the existing DS70A is large enough to accommodate all three large demolition areas (D1, D2 and D3) proposed for construction at the EOD field training area. With the implementation of the proposed action, NSWC-IHD would no longer be able to use DS 70A due to the fact that the range would be needed for the construction and year-round, unrestricted operation of the EOD school. The NSWC-IHD would need to find another suitable location to accommodate their training.

Information concerning the training frequency, personnel numbers, other facilities (training sites, observation bunkers, training towers, a range operations headquarters building, a robotics range support building, range storage buildings, covered training areas (bleachers), barracks and the water supply and distribution system), and operation of these facilities, as presented in the 2007 BRAC EIS and the sequential 2008 EA, remain valid.

Figure 2-1 EOD Site Location



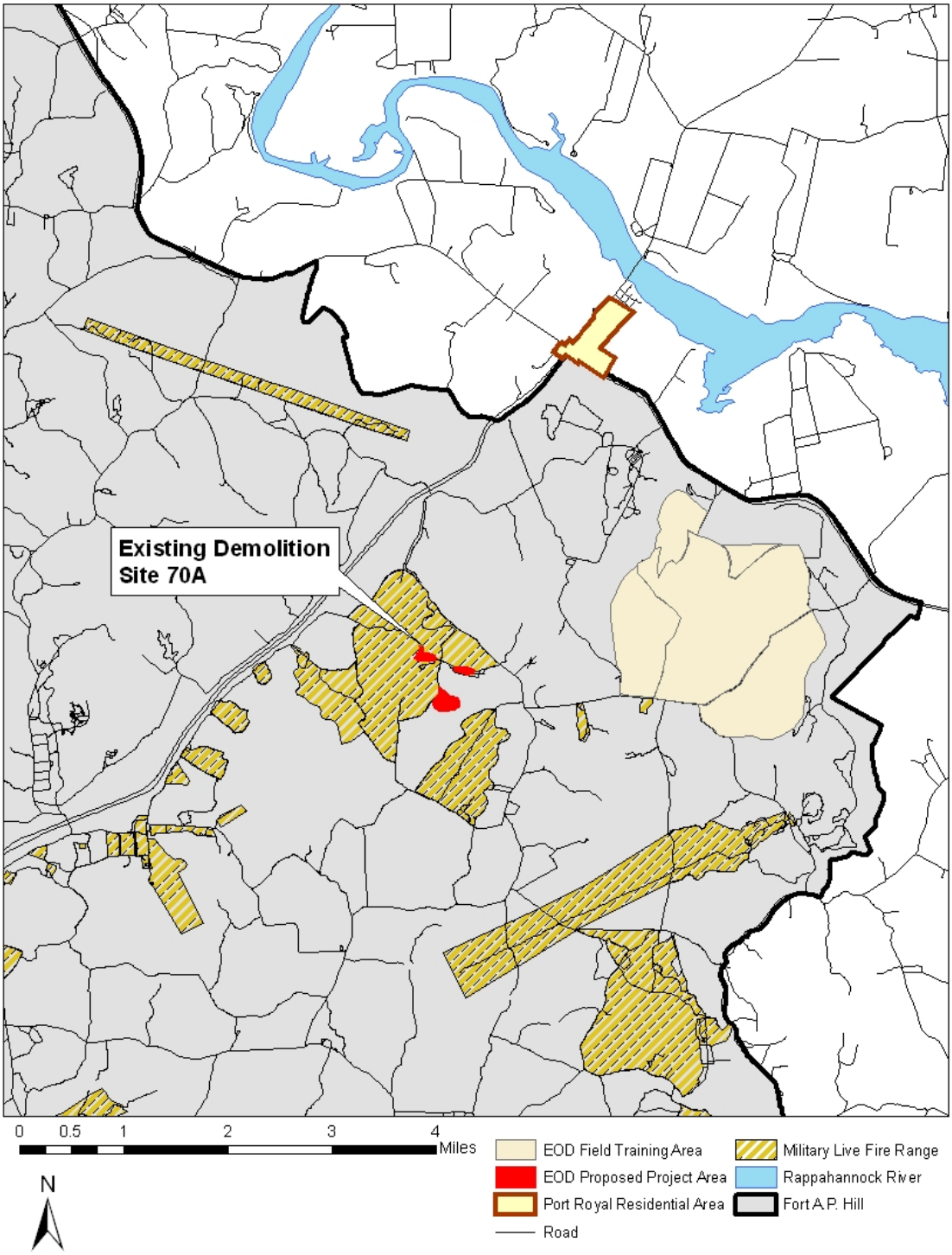
2.2.2 Location

The EOD field training area would remain in Fort A.P. Hill's Training Areas 26, 27, and 28 in the eastern portion of the installation. The three demolition sites in the proposed action would be relocated to demolition site 70A (Figure 2-2). This demolition site is located within the northern portion of the installation's restricted area. Demolition site 70A is currently operated by the NSWC-IHD and is used for experimental demolition testing, training and research.

2.2.3 Schedule

Construction of the EOD field training area and associated demolition sites would take about one year, beginning in April 2010. Construction would have to be completed by the September 2011 deadline to comply with the BRAC requirement to relocate affected personnel and missions.

Figure 2-2 Proposed Location of D1, D2 & D3 and the EOD Field Training Area



2.3 Alternatives

The Fort A.P. Hill staff, working with Redstone Arsenal EOD personnel, and after reviewing all potential sites, proposed an already existing range in the Restricted Area for the siting of the three proposed demolition sites. This location is already used for demolition testing and training has acceptable terrain features and availability of fragmentation safety arcs.

The Army considered one alternative to the proposed action. This alternative could have relocated the one demolition site, D1, in direct conflict with the proposed Battle Area Complex (BAX) to Demolition Site 70A within the restricted area at Fort A.P. Hill. Demolition site 2 (D2) and D3 would remain as described in the *Final Environmental Assessment of Constructing and Operating an Explosives Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia* (July 2008).

2.3.1 Alternative 1: Relocating Only D1

The proposed Alternative One is to relocate only the facilities and activities proposed at D1 to Fort A.P. Hill's existing DS 70A. This alternative would retain D2 and D3 within the EOD field training area at Training Areas 26, 27, and 28. This alternative would provide adequate access to the BAX facility, however, from an operational standpoint, all three demolition sites need to be in close proximity to maximize military training time and coordination efforts. Therefore, this alternative was found to be not feasible and, accordingly, is not evaluated in detail in this SEA.

2.4 No Action Alternative

The CEQ regulations prescribe inclusion of the No Action Alternative, which serves as the benchmark by which federal actions can be evaluated. No Action assumes that an EOD field training area could be established as approved in the FONSI for the 2008 Fort A.P. Hill EA. This SEA incorporates by reference the discussion of the EOD field training area contained in the Fort Lee BRAC EIS and subsequent 2008 Fort A.P. Hill EA. The No Action alternative is evaluated in this SEA.

Under the No Action Alternative, EOD training would be conducted on ranges constructed within an area of about 2,059 acres in the eastern portion of the installation in Training Areas 26, 27 and 28. The structures and facilities described in the July 2008 EA would remain within these training areas. The NSWC-IHD would continue operating the DS 70A range. A conflict with the proposed BAX facility would remain and an alternate bypass or road would need to be constructed.

SECTION 3.0
AFFECTED ENVIRONMENT AND CONSEQUENCES

3.1 Land Use

3.1.1 Affected Environment

3.1.1.1 Regional Geographic Setting and Location

Fort A.P. Hill is in Caroline and Essex counties about 75 miles south of Washington, DC. The political jurisdictions surrounding the installation are Caroline County, Essex County, King George County, Spotsylvania County, and the towns of Port Royal and Bowling Green. The location of the installation is shown in Figure 2-1. Climate in the area is temperate with mild winters and hot, humid summers. Prevailing winds in the region are from the north and northwest in winter and autumn and from the south in spring and summer (NCDC 1998).

3.1.1.2 Installation Land Use

Fort A.P. Hill is a field training installation in the northeastern portion of Caroline County, Virginia. The Army owns 75,794 acres of the installation and leases Hick's Landing, which is an 87- acre parcel from two private citizens (FAPH 2009). About 85 percent of the installation is forested and is used to conduct training exercises. The remaining acreage is divided among cantonment, grassland, shrub, and agricultural areas. Overall land use can be divided into several major categories: Training and Range (72,921 acres, or 96 percent of the installation that is predominantly woodlands), Administration, Family Housing, and Airfield areas (3,165 acres). The cantonment area is in the southwest along Route 301; it consists of the headquarters, support buildings, and related facilities.

The area of Fort A.P. Hill with respect to the proposed action is a combined 42-acre tract of land in and around the existing DS 70A range. The proposed demolition site areas are separated into three ranges in the eastern part of the Restricted Area of the installation (Figure 2-1).

The proposed EOD demolition site area is classified entirely as range land use. The area is now operated by the NSWC-IHD and is used for experimental demolition testing, training and research.

Both D2 and D3 sites are classified as non-forested open live-fire range areas. D1 is a pine stand with a year of origin documented as 1941. A salvage harvest was conducted on this pine stand in 1994 due to a southern pine bark beetle (*Dendroctonus frontalis*) outbreak. This area was allowed to regenerate naturally, but due to the high fire frequency, particularly through prescribed burning, this area is characterized by grasses with individual and clumps of trees scattered throughout. The dominant tree species present is loblolly pine (*Pinus taeda*) with scattered hardwoods including oak species (*Quercus spp.*)

3.1.1.3 Surrounding Land Use

The off-post developed area nearest to the proposed action area is the Port Royal settlement, which is about 3.5 miles north of the proposed site in Caroline County, Virginia (Figure 2-1). The Caroline County Comprehensive Plan designates Port Royal as a secondary-growth area for the county. The plan projects

low- to medium-density residential development along the boundaries of the settlement shared with Fort A.P. Hill. A consistent increase in growth pressures in the region indicates continued commercial development at the intersection of Routes 17 and 301, as well as along the route corridors. Port Royal is committed to protecting the small-town character of the community through use of traditional neighborhood designs and low-impact development techniques (Port Royal 2004). Another community of note is the Portobago Bay residential development which lies approximately five miles to the east of the proposed project.

South of Fort A.P. Hill from Route 301 to the Essex County boundary, land uses are predominantly Agricultural Preservation and Floodplain/Open Space. Areas northwest, west, and southwest of the proposed action area are installation land.

3.1.2 Environmental Consequences

3.1.2.1 Proposed Action

No adverse effects on surrounding land use northeast and east of the installation would be expected. The proposed relocated EOD demolition site area is an already existing demolition range within the restricted area of the installation. Using the area for demolitions training would be compatible with the current land use. Further discussion of noise generated at the range is in the Noise section (Section 3.4). Implementing the proposed action would not require that surrounding counties rezone any affected areas.

No effects on regional land use planning or zoning at Fort A.P. Hill would be expected.

Best Management Practices

No best management practices (BMPs) for land use would be necessary. BMPs for noise effects are discussed in Section 3.4, Noise.

Cumulative Effects

A minor adverse cumulative effect on surrounding land use would be expected. Two reasonably foreseeable actions are planned that, when combined with the proposed action, might have cumulative adverse effects on the noise environment surrounding Fort A.P. Hill and, therefore, on surrounding residential area land use. The two actions are establishment of the Asymmetric Warfare Group (AWG) training range complex (FONSI signed 21 December 2006) and establishment of the Naval Special Warfare Explosive Center of Excellence (NSWECE), FONSI expected to be completed in July 2009. Construction for the AWG Range Complex is expected to begin in FY2011 and the NSWECE in FY2010. Further discussion of the cumulative effect is provided in Section 3.4, Noise.

3.1.2.2 No Action Alternative

Incorporation. This SEA incorporates by reference the land use discussion related to the 2,059-acre EOD training area contained in the Environmental Assessment of Constructing and Operating an Explosive Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia. Specific information is provided below.

A long-term minor adverse effect on surrounding land use would be expected from implementing the No Action Alternative. The EOD training area proposed in the Fort Lee BRAC EIS and the subsequent EOD EA would be established close to the installation border and close enough to the Port Royal settlement and Portobago Bay Community that the noise from explosions of large charges could create an incompatibility with nearby residential areas. No impacts on installation land uses would be expected.

3.2 Aesthetic and Visual Resources

3.2.1 Affected Environment

The proposed EOD demolition ranges are largely in cleared open areas, with fairly flat terrain. The site is not visible from land off the installation.

3.2.2 Environmental Consequences

3.2.2.1 Proposed Action

No adverse effects on the aesthetic and visual environment would be expected. Under the proposed action, a limited amount of site clearing (estimated at 23 acres for D1) would occur. Sites D2 and D3 are already cleared. Each demolition site would be isolated from the others, and the sites would not be visible except from ingress and egress routes specifically constructed to access them. The entire area would continue to be used and maintained for military live-fire training.

Best Management Practices

No BMPs for the aesthetic and visual aspects of the proposed action would be necessary.

Cumulative Effects

No cumulative effects on aesthetic and visual resources would be expected.

3.2.2.2 No Action Alternative

Incorporation. This SEA incorporates by reference the aesthetic and visual resources discussion related to the 2,059-acre EOD training area contained in the Environmental Assessment of Constructing and Operating an Explosive Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia. Specific information is provided below.

No adverse effects on the visual environment would be expected under the No Action Alternative. The EOD demolition sites would be visible only from the immediate surroundings of the ranges complex, and they would not change the overall impression of the area as open non-forested and primarily undeveloped.

3.3 Air Quality

3.3.1 Affected Environment

3.3.1.1 National Ambient Air Quality Standards and Attainment Status

National Ambient Air Quality Standards and Local Ambient Air Quality. U.S. Environmental Protection Agency (EPA) Region 3 and the Virginia Department of Environmental Quality (VDEQ) regulate air quality in Virginia. EPA established primary and secondary National Ambient Air Quality Standards (NAAQS) at Title 40 of the *Code of Federal Regulations*, Part 50. The NAAQS set acceptable concentration levels for seven criteria pollutants: particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), sulfur dioxide (SO_2), carbon monoxide (CO), nitrous oxides (NO_x), ozone (O_3), and lead. Short-term NAAQS (1-, 8-, and 24-hour periods) have been established for pollutants that contribute to acute health effects, while long-term NAAQS (annual averages) have been established for pollutants that contribute to chronic health effects. Each state has the authority to adopt standards stricter than those established under the federal program; however, the Commonwealth of Virginia accepts the federal standards.

EPA regulations designate Air-Quality Control Regions (AQCRs) in violation of the NAAQS as nonattainment areas. AQCRs not in violation of the NAAQS are attainment areas. Fort A.P. Hill is within the Northeastern Virginia Intrastate AQCR (AQCR 224), which is an attainment area for all criteria pollutants. Therefore, neither an applicability analysis nor a formal conformity determination under the General Conformity Rule is required for the proposed action.

3.3.1.2 Local Ambient Air Quality

Existing ambient air quality conditions near Fort A.P. Hill can be estimated from measurements conducted at air monitoring stations close to the installation. The most recently available data from nearby monitoring stations is provided in Table 3-1 (USEPA 2008).

Table 3-1
2008 Local Ambient Air Quality Monitoring

Pollutant and averaging time	Primary NAAQS[a]	Secondary NAAQS[a]	Location where maximum was recorded	Monitored data[b]
CO				
8-hour maximum[c] (ppm)	9	(None)	NA	NA
1-hour maximum[c] (ppm)	35	(None)		
NO_2				
Annual arithmetic mean (ppm)	0.053	0.053	U.S. Geological Survey Center Caroline County	0.002ppm
O_3				
8-hour maximum[d] (ppm)	0.075	0.075	Henrico County	0.089
$PM_{2.5}$				
Annual arithmetic mean[e] ($\mu g/m^3$)	15	15	Henrico County	11.26
24-hour maximum[f] ($\mu g/m^3$)	35	35	Henrico County	26.4

Pollutant and averaging time	Primary NAAQS[a]	Secondary NAAQS[a]	Location where maximum was recorded	Monitored data[b]
PM_{10}				
24-hour maximum[c] ($\mu g/m^3$)	150	150	King William County	35
SO_2				
Annual arithmetic mean (ppm)	0.03	(None)		
24-hour maximum[c] (ppm)	0.14	(None)	NA	NA
3-hour maximum[c] (ppm)		0.5		

ppm = parts per million

$\mu g/m^3$ = micrograms per cubic meter

NO_2 = nitrogen dioxide

Notes:

[a] Source: 40 CFR 50.1–50.12.

[b] Source: USEPA 2008.

[c] Not to be exceeded more than once per year.

[d] The 3-year average of the fourth highest daily maximum 8-hour average ozone concentrations over each year must not exceed 0.075 ppm.

[e] The 3-year average of the weighted annual mean $PM_{2.5}$ concentrations from must not exceed 15.0 $\mu g/m^3$.

[f] The 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor must not exceed 35 $\mu g/m^3$.

[g] The 3-year average of the weighted annual mean PM_{10} concentration at each monitor within an area must not exceed 50 $\mu g/m^3$.

3.3.1.3 Existing Installation Emissions

Based on the installation's potential to emit, Fort A.P. Hill is a minor source of criteria pollutants. Stationary sources of air emissions at the installation include boilers, generators, degreasers, and gasoline dispensers. Fort A.P. Hill has a minor Stationary Source Permit to Operate (Permit no. 40306). The installation must submit comprehensive emission statements to VDEQ annually. Table 3-2 summarizes 2008 on-post emissions from stationary sources.

Table 3-2
Fort A.P. Hill 2008 Stationary Source Total Emissions (Tons Per Year)

SO_2	CO	PM_{10}	$PM_{2.5}$	NO_x	VOC
1.1	0.9	0.2	0.2	3.5	2.4

Source: FAPH 2008a.

Note: VOC = volatile organic compound.

3.3.2 Environmental Consequences

Air quality impacts would be considered minor unless the estimated emissions would contribute to a violation of any federal, state, or local air regulation or would contribute to a violation of Fort A.P. Hill's air operating permit.

3.3.2.1 Proposed Action

Air impacts from the proposed action would include short-term, temporary emissions from construction equipment operation, the removal of vegetation and possible fugitive dust from vehicle movement. During construction, all fugitive dust would be kept at a minimum using control methods recommended under the Virginia Air Quality Regulations, such as wetting roadways and using construction entrances. During site operations, fugitive dust would be kept at a minimum through the use of operational controls such as limiting vehicles within the range.

Training operations at the relocated EOD demolition sites would be long-term and localized. There are no regulatory emissions restrictions for the proposed training on this site**.**

No significant effects to air quality are anticipated by construction and operation of the relocated EOD demolition sites.

General Conformity

The Clean Air Act mandates the General Conformity Rule (GCR) to ensure that federal actions in nonattainment and maintenance areas do not interfere with a state's timely attainment of the NAAQS (40 CFR 93.153). Because the proposed action is in an area that is in attainment for all criteria pollutants, the GCR does not apply and an applicability analysis is not required. The proposed action is exempt from the GCR (40 CFR 95.153); a Record of Non-Applicability is provided as Appendix B.

Regulatory Review and Air Permit Requirements

All construction would be accomplished in full compliance with Virginia Regulations for the Control and Abatement of Air Pollution, particularly Title 9 of the *Virginia Administrative Code* (VAC), Agency 5, Chapter 40, Part II. Articles of particular relevance are the following:

- Article 1, Visible Emissions and Fugitive Dust/Emissions (9 VAC 5-40-60 to 120)
- 9 VAC 5-130-10 to 60

Cumulative Effects

No cumulative adverse effects on air quality would be expected. The Commonwealth of Virginia takes into account the effects of all past, present, and reasonably foreseeable emissions during the development of its State Implementation Plan to implement the Clean Air Act. It is understood that a project of this limited size and scope would not interfere with the attainment status of the region.

3.3.2.2 No Action Alternative

Incorporation. This SEA incorporates by reference the air quality discussion related to the 2,059-acre EOD training area contained in the Environmental Assessment of Constructing and Operating an Explosive Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia. Specific information is provided below.

Short- and long-term minor adverse effects on air quality would be expected from vehicle and fugitive dust emissions during facility construction and from operational emissions attributable to generators,

boilers, and other internal combustion sources. No violations of federal, state, or local air regulations or Fort A.P. Hill's air operating permit would be expected.

3.4 Noise

3.4.1 Affected Environment

The Federal Interagency Committee on Urban Noise (FICUN) has developed land use guidelines, adopted by the Department of Defense, for areas on or near noise producing activities, such as highways, airports and firing ranges. The Army uses these guidelines to designate Noise Zones (NZ) for land use planning. Land use guidelines are meant to ensure the compatibility with the noise environment while allowing maximum beneficial use of contiguous property. Fort A. P. Hill has an obligation to the surrounding communities to determine ways to protect both the people living and working adjacent to the installation and the public's investment in the installation and the training which occurs there.

3.4.1.1 Noise Zones

Noise Zones (NZ) are designated as Land Use Planning Zone (LUPZ), I, II or III based on the number of decibels (dB) produced for both long term and impulsive events. NZ descriptions for Fort A. P. Hill include:

- LUPZ consists of the areas around a noise source where the C-weighted day-night level (CDNL) is less than 57 dB for all noise. A LUPZ is usually acceptable for all types of land use activities.

- NZ I consists of the areas around a noise source where a single event noise is less than 87 dB for small arms and the C-weighted day-night level (CDNL) is less than 62 dB for large arms impulsive noise. The CDNL is the time weighted average sound level with a 10 dB penalty added to night time (2200 to 0700 hours) noise levels.

- NZ II consists of the area where a single event noise is between 87 and 104 dB for small arms and the CDNL is between 62 and 70 dB for large arms impulsive events. Land use within a NZ II area is normally limited to industrial, manufacturing and transportation type activities.

- NZ III consists of the area around a noise source where a single event noise is greater than 104 dB for small arms and the CDNL is greater than 70 dB for large arms impulsive events. Noise sensitive land uses are not recommended for NZ III areas.

Based on Department of Defense guidance, the Department of the Army has developed an Environmental Noise Management Program which considers noise from all sources of military activities. Fort A. P. Hill has an installation Environmental Noise Management Plan (ENMP). The ENMP, which applies to all tenants and activities, provides information and recommendations for reducing noise impact during land and air training exercises. It also provides information for weapons firing and noise complaint investigation procedures.

3.4.1.2 Potential for Complaints Regarding Large-Caliber Weapons and Demolition Noise

The use of explosives and large-caliber weapons are common causes of complaint among people living near military installations. Community annoyance due to steady-state noise is typically assessed by averaging noise levels over a protracted period. This approach can be misleading because it does not assess community noise effects due to relatively infrequent, yet loud, impulsive noise events. For example, for a demolition range at which several hundred charges are detonated each year, peak sound levels can exceed 140 dB in areas where annual DNL values indicate that residential land use is recommended for the noise level (i.e., within the military's zone 1). Therefore, to better describe the noise environment, this section discusses individual acoustical events. Peak noise contours provide the absolute maximum sound level for an individual acoustical event, not an average over several events or over a period of time like the DNL. Although not a good descriptor of the overall noise environment like the DNL, peak levels better indicate the potential for concern and possibility of complaints among people living near the boundary of an installation after an individual event. Table 3-3 lists risk of noise complaints guidelines using peak noise levels for impulsive noise.

Table 3-3
Risk of Noise (Peak) Complaints by Level of Noise

Risk of noise complaints	General description of individual demolition event	Large-caliber weapons (> 20 mm) and demolition
Low	Audible and distant	< 115 dBP
Medium	Clearly audible	115–130 dBP
High	Loud	130–140 dBP
Risk of structural damage claims	Very loud	> 140

Source: U.S. Army 2008.

3.4.1.3 Existing Ambient Noise Levels

The noise generated by military aircraft and weapons extends to areas outside the installation boundary. The noise from industrial-type operations and the movement of heavy military vehicles does not have a considerable effect on the surrounding civilian communities or military housing areas (USACHPPM 1999). Fort A.P. Hill, though not subject to local noise policies or ordinances, has no existing activities that conflict with local standards and guidelines related to human health and safety.

Fort A.P. Hill has one Army airfield, one drop zone (with one assault airstrip), and many authorized landing zones to support aviation training for rotary and fixed-wing aircraft. The Army airfield, on the southeast side of the main gate on Route 301, is used only for rotary-wing operations. Fixed-wing aircraft operations are conducted primarily at the drop zone, which is in the northwest portion of the installation. The daily number of operations at the Army airfield is low—fewer than 10 per day. Residents living near the installation in the Port Royal area (close to the proposed relocated EOD demo range area), along the eastern boundary (e.g., near Supply, Virginia), and near the northwest corner (e.g., near Long Branch and Corbin, Virginia) are exposed to aircraft noise at Fort A.P. Hill.

The existing small-caliber weapons noise contours are shown Figure 3-1.[2] And the existing large-caliber weapons CDNL contours are shown in Figure 3-2. Large-caliber noise zone II extends beyond the

[2] Common Army small arms are the M16 rifle (5.56-millimeter [mm] ammunition), the M240 (7.62 mm) and M249 (5.56 mm) machine guns, and the .50-caliber machine gun.

southern boundary less than one-quarter mile. Noise zone III is completely contained within the installation boundary. During periods of intense training, the short-term CDNL at a particular range is larger than that depicted in Figure 3-2. Such periods of intense activity occasionally lead to complaints, particularly when artillery firing takes place at night. As expected, some noise complaints have been documented and investigated after large-caliber training events.

The existing large-caliber weapons peak level contours for D1, D2 and D3 are shown in Figure 3-3.

Figure 3-1 Existing Small-Arms Range Noise Contours

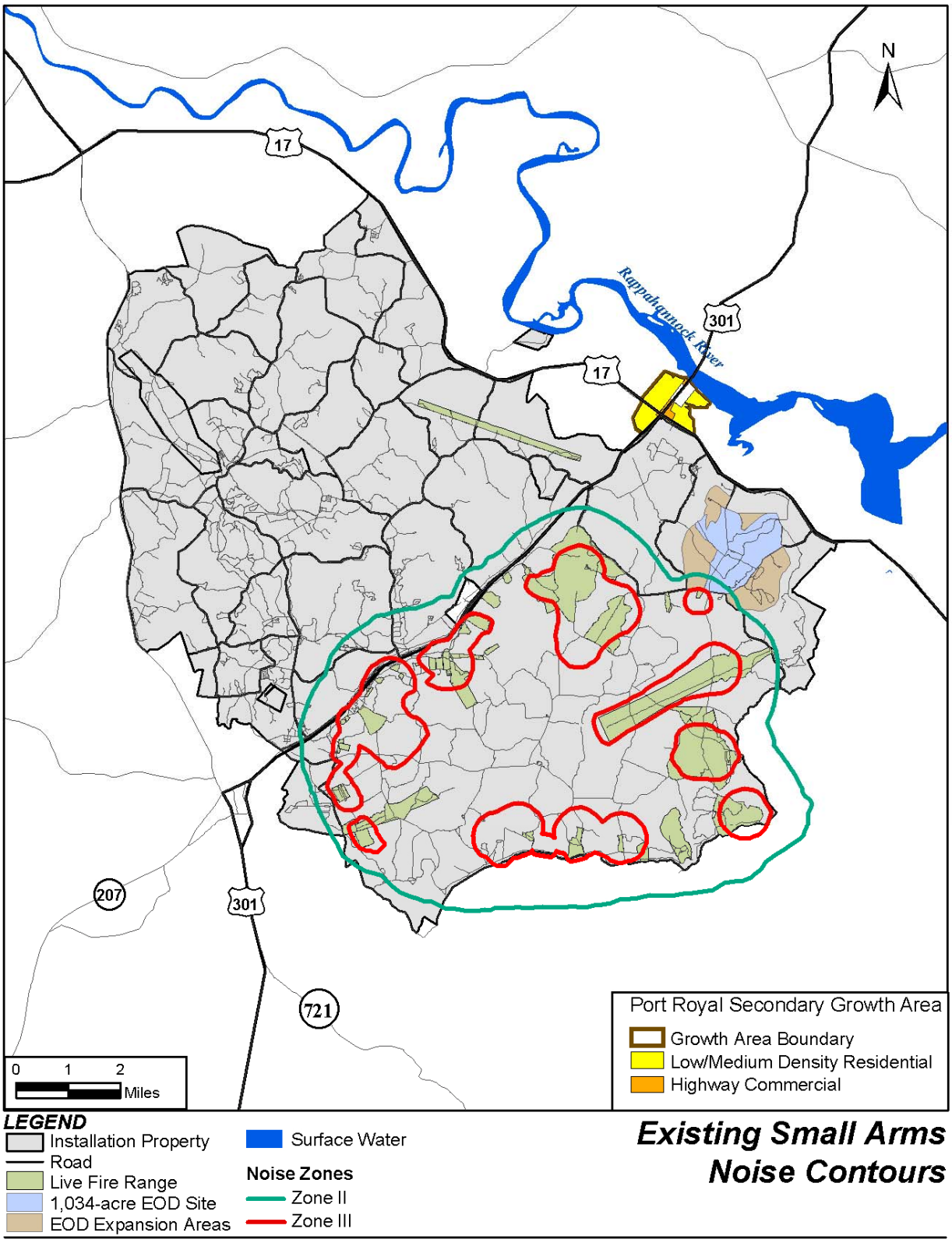
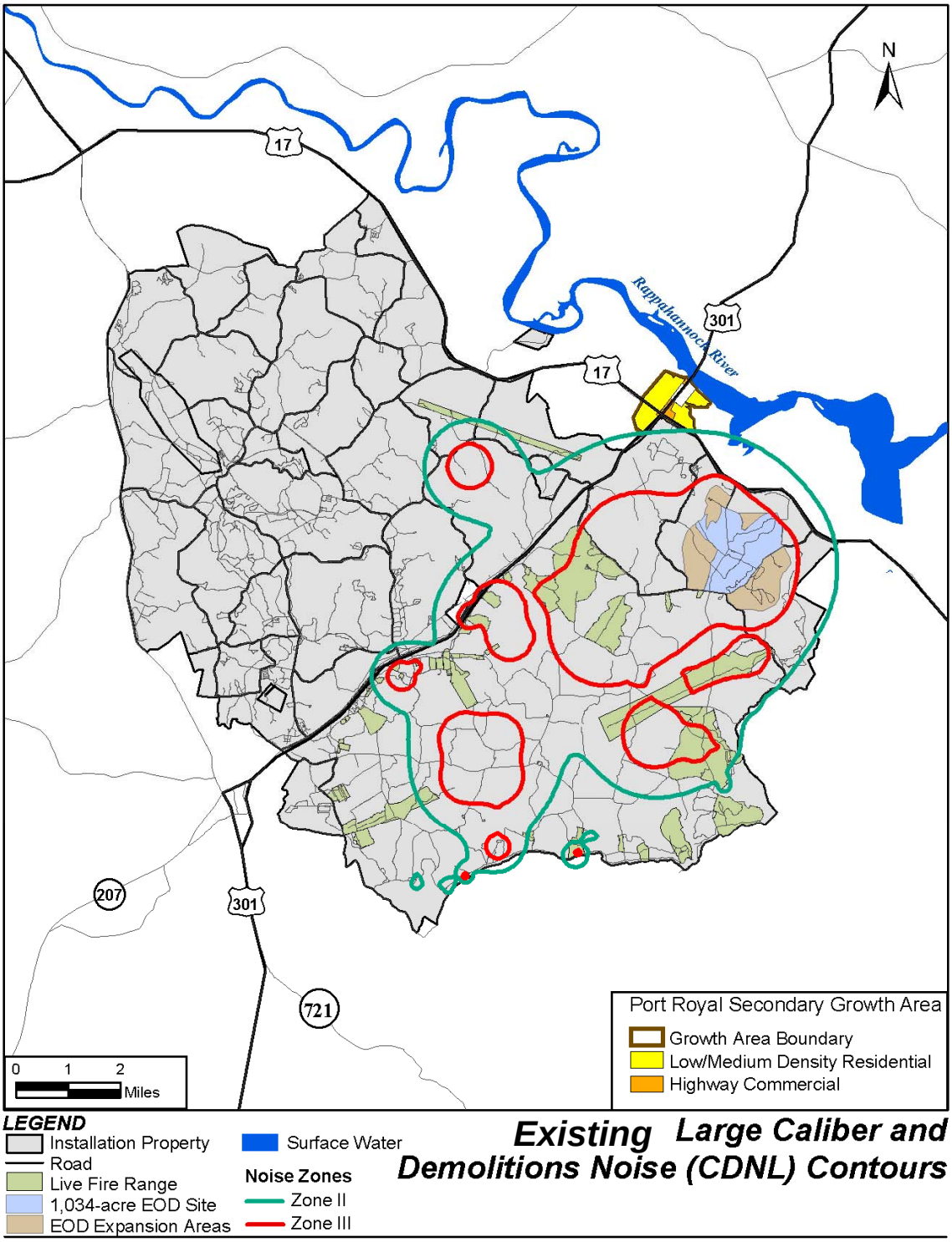


Figure 3-2 Existing Large-Caliber and Demolition Noise (CDNL) Contours



The installation has ongoing efforts to minimize noise due to operations. Aircraft no-fly zones have been established around Bowling Green, Port Royal, and a wildlife refuge; the minimum altitude for military aircraft flying over land adjacent to the boundary is 1,200 feet above ground level; and helicopter traffic is routed along the boundary rather than over private property. Small-arms ranges have been located to provide adequate distance from the installation boundary such that the weapons fired should not disturb neighbors. To protect its neighbors from annoying levels of demolitions noise, Fort A.P. Hill imposes weight limits on its demolition ranges. All demolitions training is restricted to less than or equal to 100-lb equivalent trinitrotoluene (TNT). This limit drops to 50-lb equivalent TNT at dusk or in overcast and cloudy conditions when noise can propagate more readily. Exceptions to these limits are granted case by case.

3.4.2 Environmental Consequences

3.4.2.1 Proposed Action

Short-term minor adverse and long-term beneficial effects on the noise environment would be expected with implementation of the proposed action. The short-term minor adverse would be primarily due to heavy equipment noise during construction. The long-term beneficial effects would be primarily due to the relocation of the three demolition sites (D1, D2 & D3) from an area currently without any regular noise producing activities to an already existing and operating demolition range within the interior restricted (impact) area of the installation.

Noise from Construction Activities

The zone of relatively high construction noise typically extends 400 to 800 feet from the site of major equipment operations. Locations more than 1,000 feet from construction sites seldom experience noteworthy levels of construction noise. Given the temporary nature of proposed construction activities and the limited amount of noise that construction equipment would generate, this effect would be considered minor (USEPA 1971).

Construction noise is expected to dominate the soundscape for all on-site personnel. Construction personnel, and particularly equipment operators, would wear adequate personal hearing protection to limit exposure and ensure compliance with federal health and safety regulations.

Figure 3-3 Existing Large Demolition (D1, D2 & D3) Noise (Peak Level) Contours

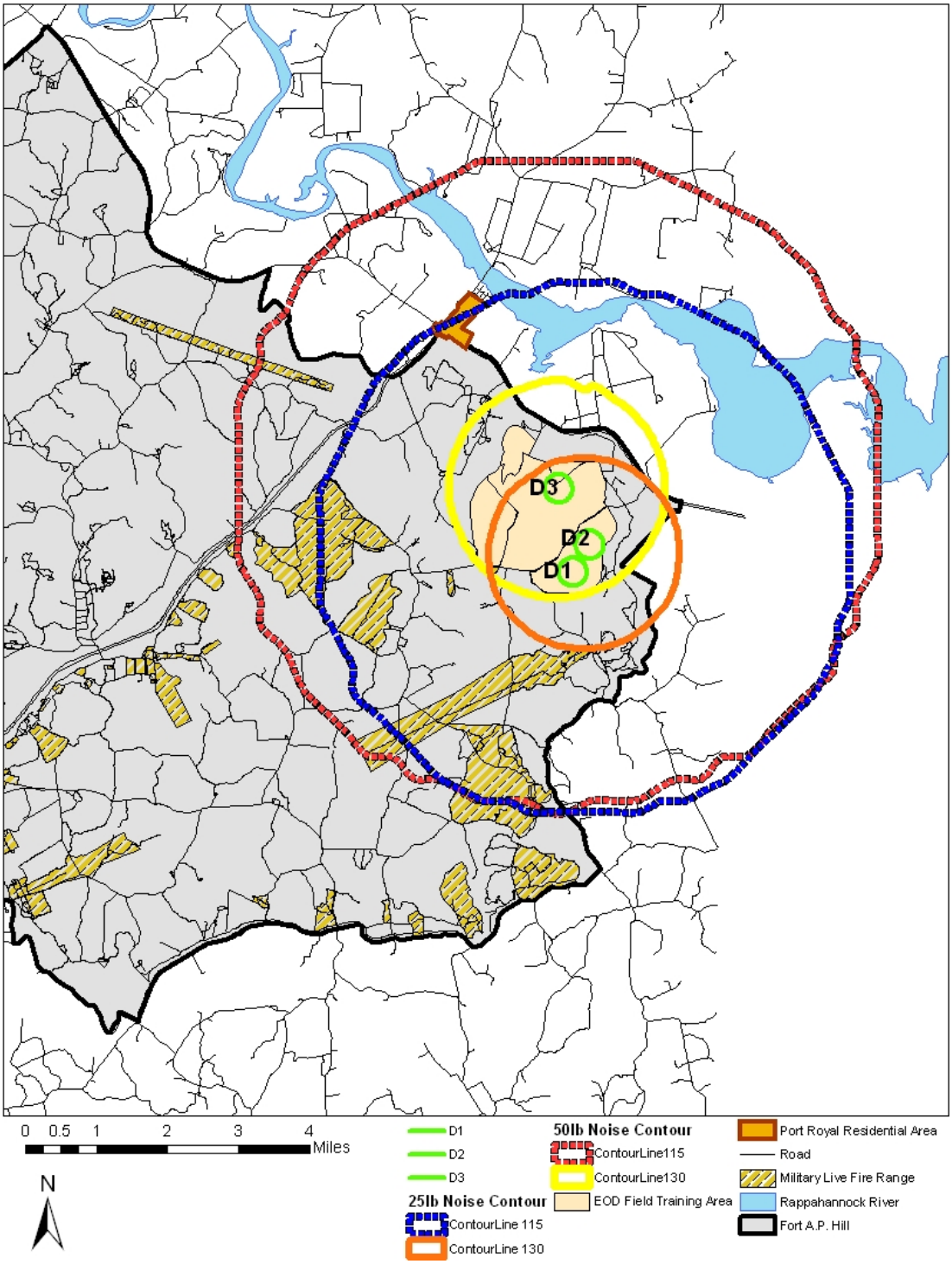
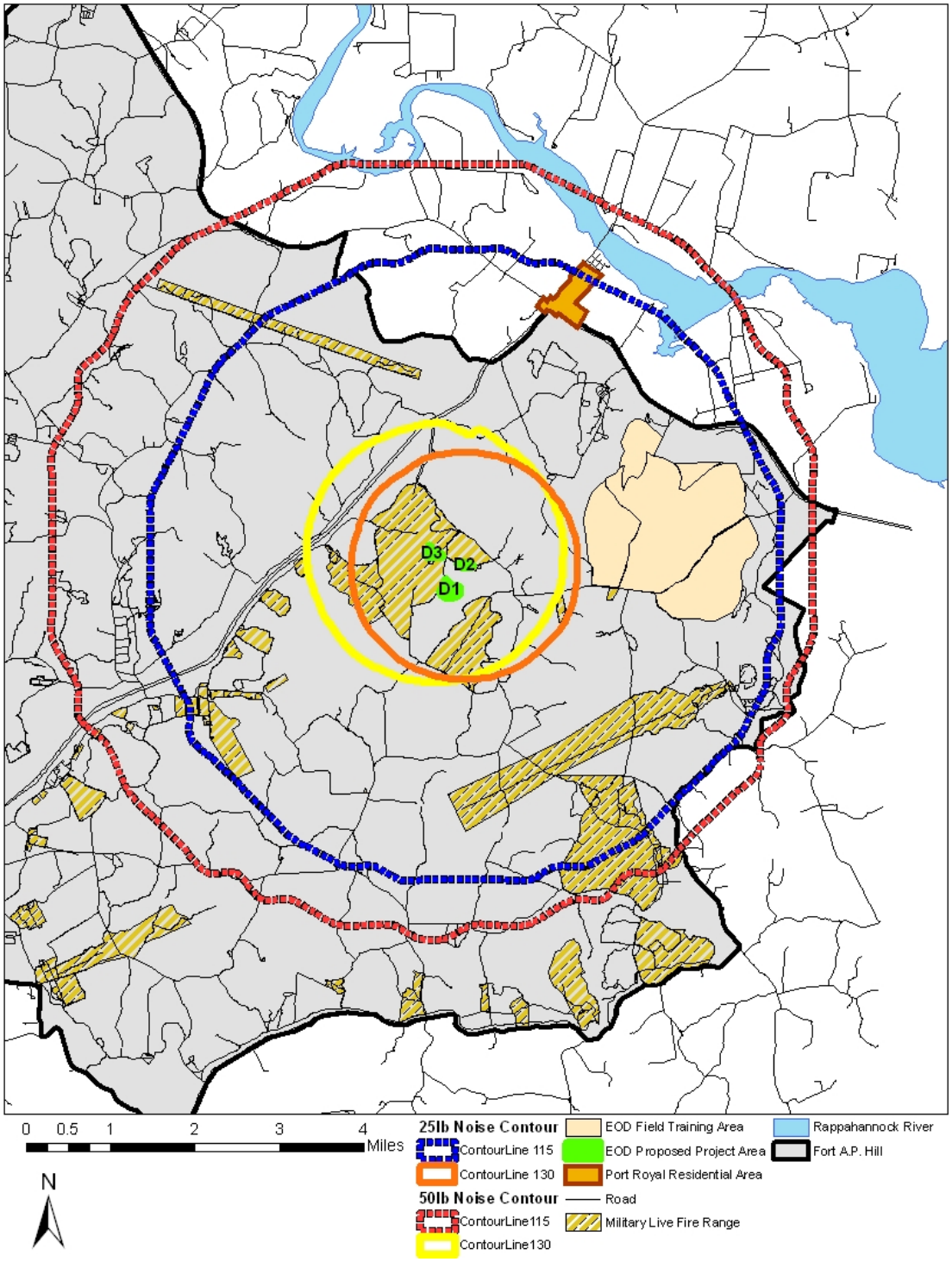


Figure 3-4 Proposed Action Noise (Peak) Contours



Noise from Aircraft and Small-Arms Activities

The proposed action would not introduce new aircraft training, new small-arms ranges, or changes in small-arms weapons used at Fort A.P. Hill.

Noise from Proposed EOD Range Activities

The proposed relocated EOD demolition range area would facilitate demolitions training with TNT equivalent charges of 50 lbs or less. The types and number of charges expected to be used under the proposed action are outlined in Table 3-7.

Table 3-7
Demolitions Charges Due to the Proposed Action

		Frequency (charges/year)	
Size of charge	**TNT equivalent weight (lb)**	**Daytime (7 a.m.– 11 p.m.)**	**Nighttime (11 p.m.– 7 a.m.)**
Large	25 (D1-D2)	276	0
	50 (D3)	40	0

The existing annual average-weighted (CDNL) contours are depicted in Figure 3-2. With the proposed action, due to the relatively low number of events that would be relocated, the change to the annual average noise contours would be negligible. There would be a very slight decrease in the extension of Zone II levels off the eastern boundary, but the change would be so slight that the C-weighted Day-night Level (CDNL) contours depicted in the EA for the 2,059-acre EOD site would still be an adequate representation of the Fort A.P. Hill annual noise environment.

The proposed action of relocating the (276) 25 lbs detonations at D1 and D2 to an already existing and operating demolition site within the interior restricted area of the installation, would result in the Portobago Bay community no longer being within the complaint risk (Peak) contours for these activities. Additionally the Portobago Bay community would no longer be within the complaint risk (Peak) contours for the (40) 50 lbs charges relocated from the original D3 site. Under the proposed action, demolitions training would be restricted to current range TNT equivalent weight limits. Exceptions to these limits are granted case by case. As a result, there would be a neutral effect on the Port Royal community. Port Royal would not be exposed to louder or more frequent events than presented in the July 2008 EA.

The Peumansend Creek Regional Jail is on a parcel completely surrounded by Fort A.P. Hill. It is about 3 miles west of the proposed relocated EOD range (surrounded by Fort A.P. Hill property) and adjacent to existing ranges. The overall noise environment at the jail would not be expected to change with the implementation of the proposed action (Figures 3-6 and 3-7).

Demolition noise is expected to dominate the soundscape for all on-range personnel. Army personnel would wear adequate personal hearing protection to limit exposure and ensure compliance with federal health and safety regulations.

Best Management Practices

The demolition activities would comply with existing noise-control policies and procedures. The installation Environmental Noise Management Plan outlines all efforts to minimize noise. Measures in the plan include complaint management and investigation, community outreach and education.

If necessary, Fort A.P. Hill would expand the perimeter noise monitoring system to add a noise monitor in the area of concern. The monitors would allow the installation to evaluate operations under varied weather conditions and assess how noise levels can affect neighbors off-post. The installation would continue to promote an open dialogue with neighboring localities, including rezoning reviews; education and outreach with local communities; and a comprehensive, proactive noise-complaint management program.

Cumulative Effects

Within the same time frame as the proposed action, there are two reasonably foreseeable actions that, when combined with the proposed action, might have cumulative effects on the noise environment surrounding Fort A.P. Hill: establishment of the AWG training range complex and establishment of the NSWECE. These are described in more detail below.

The AWG training range complex would consist of one indoor firing range, one 800-meter (875-yard) firing range, and one demolition range for AWG mission-essential training. The indoor firing range and 875-yard firing range would be internal to the installation and would not introduce training activities that would change the small-arms peak noise contours off the installation. The proposed AWG demolition range would be near the proposed EOD range in the eastern portion of the installation within the borders of Training Area 25C east of Route 301 and North Range Road.

The proposed NSWECE would include an administrative area, a training area, and a demolition area in three separate areas. The area for demolition training would be used for explosive charges up to 35 lb.

The annual average-weighted (CDNL) contours for the combined activities, noise zone III (high levels of noise) would not extend beyond the borders of the installation. Noise zone II (moderate levels of noise) would slightly decrease in distance as described in the July 2008 EA beyond the eastern boundary. Therefore, cumulative impacts on the noise environment surrounding Fort A.P. Hill would be minor. Fort A.P. Hill prepared separate environmental assessments for the proposed AWG and NSWECE actions (FAPH 2006; FAPH 2008).

The peak noise contours with the proposed action and the establishment of the other ranges will result in a neutral effect in the Port Royal area. There will be a positive effect to the east including the Portobago Bay and other nearby communities. The 140-dBP and 130-dBP noise contours for the combined activities (AWG, NSWECE, and the proposed action) would be considerably reduced towards the installation boundary. The 115-dBP noise contour would decrease by over two miles on the eastern installation boundary. The potential of noise-related complaints would be considered a minor cumulative effect.

3.4.2.2 No Action Alternative

Incorporation. This SEA incorporates by reference the noise discussion related to the 2,059-acre EOD training area contained in the Environmental Assessment of Constructing and Operating an Explosive Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia. Specific information is provided below.

Short- and long-term minor adverse effects on the noise environment would be expected with the implementation of the No Action Alternative. The effects would be due to heavy equipment noise during construction and the operation of the proposed 2,059-acre EOD area.

3.5 Geology and Soils

3.5.1 Affected Environment

3.5.1.1 Geologic and Topographic Conditions

Fort A.P. Hill is in the Atlantic Coastal Plain Physiographic Province. Land features on the installation range from smooth uplands and plateaus to V-shaped stream valleys and ravines that rise abruptly from floodplains. The dominant geomorphic process is active riverine erosion of surface land features, such as rolling terrain that has been influenced by the effects of fluvial dissection by rivers and streams and deposition during overbank flooding.

3.5.1.2 Soils

There are 26 unique soil series on Fort A.P. Hill, three of which comprise most of the soil types within the proposed relocated demolition sites D1, D2, & D3 (FAPH GIS 2008, USDA 2006). These predominant soil series are briefly described below. The soil types within these series are listed on Table 3-8, along with ratings of suitability for particular uses.

Table 3-8
Soil Series on the Proposed EOD Relocated Demolition Sites at Fort A.P. Hill

Soil Type	Map Symbol	Prime Farmland	Dwellings with basements	Dwellings without basements	Septic tank absorption fields	Local roads	Approximate Percentage of Proposed Action	Approximate Acreage in Proposed Action
Kempsville-Emporia-Remlik complex, 15 to 50 percent slopes	10E	No	VL	VL	VL	VL	78%	818
Kempsville-Emporia complex, 6 to 10 percent slopes	11C	SI	SL	SL	SL	SL	3%	33
Kempsville-Emporia complex, 2 to 6 percent slopes	11B	Yes	NL	NL	SL	NL	14%	144
Bibb-Chastain complex, 0 to 2 percent slopes, frequently flooded	4A	No	VL	VL	VL	VL	5%	5

Note: NL = not limited, SI = Farmland of Statewide Importance, SL = somewhat limited, VL = very limited.

- *Kempsville.* Kempsville is moderately steep to very steep and very deep. Typically, the surface layer is sandy loam from 7 to 17 inches thick with a moderately low content of organic matter. The seasonal high water table is at a depth of more than 6 feet.
- The Bibb-Chastain complex soil series that occurs on the proposed relocation site is hydric and directly related to wetland regimes. The Bibb series consists of very deep, poorly drained, level to nearly level soils on flood plains. Typically, the surface layer is brown sandy loam 4 inches thick. The next layer, 8 inches thick, is dark gray and dark grayish brown sandy loam. The upper part of the substratum is gray sandy loam with strong brown iron masses and thin strata of silt loam to loamy sand. The lower part of the substratum is gray silt loam with strata of sandy loam and loamy sand. Slopes range from 0 to 2 percent. The Chastain component is very deep, slowly permeable soils on flood plains of rivers. Typically these soils have a dark

grayish brown surface layer over gray clayey subsoil. This complex is present on the floodplains of tributaries of Mill Creek along the western portion of the site.

3.5.2 Environmental Consequences

3.5.2.1 Proposed Action

Short- and long-term minor adverse effects on soils would be expected during construction and operation under the proposed action. The effects would primarily occur during removal of vegetation during construction activities, temporarily exposing soils and potentially increasing soil erosion and sediment runoff rates. Continual explosives training would result in long-term soil disturbance at detonation sites, and firing points would be designed to limit the potential for soil loss and storm water runoff. No effects on geology or topography would occur, and because of the long-term use of the area for military purposes, areas with prime farmland soils would not qualify as prime farmland and no violation would occur under the Farmland Protection Policy Act. Tree and brush clearing would be limited to those areas required for access roads to the demolition sites. The amount of site clearing estimated to support the proposed action is about 10 acres.

Fort A.P. Hill would obtain storm water construction permit coverage for this project from the Virginia Department of Conservation and Recreation (VDCR) under the Virginia Stormwater Management Program (VSMP). A site-specific storm water pollution prevention plan would be developed and implemented in accordance with the VSMP general construction permit, and an erosion and sediment control plan would be developed in accordance with Virginia's Erosion and Sediment Control law and regulations. Areas with slopes of 6 percent or greater are designated Highly Erodible Land, and they would be avoided for development to the maximum extent practicable (USACE Mobile District 2007).

Best Management Practices

Best management practices, including limiting land disturbance on each affected area to no more than what is necessary for the desired use, using temporary crossing bridges or mats to minimize soil compaction, and following erosion and sediment control measures for storm water control, would adequately limit the adverse impact of the proposed action on soils.

Cumulative Effects

No cumulative effects on geology or soils would be expected.

3.5.2.2 No Action Alternative

Incorporation. This SEA incorporates by reference the geology and soil resources discussion related to the 2,059-acre EOD training area contained in the Environmental Assessment of Constructing and Operating an Explosive Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia. Specific information is provided below.

Short- and long-term minor adverse effects on soils would occur under the No Action Alternative. No effects on geology, topography, or prime farmland would occur with construction and operation of the 2,059-acre continuous EOD area. All disturbed areas would be stabilized and revegetated before construction activities were completed. Roads, parking areas, and other constructed facilities would have

gravel or another suitable surface treatment that would minimize soil loss due to erosion. Use of the area for explosives training would result in continual soil disturbance at detonation sites throughout the life of the training area. Erosion control measure would be implemented in accordance with an erosion and sediment control plan developed for the project to control soil loss during construction and the training area's long-term operation.

3.6 Water Resources

3.6.1 Affected Environment

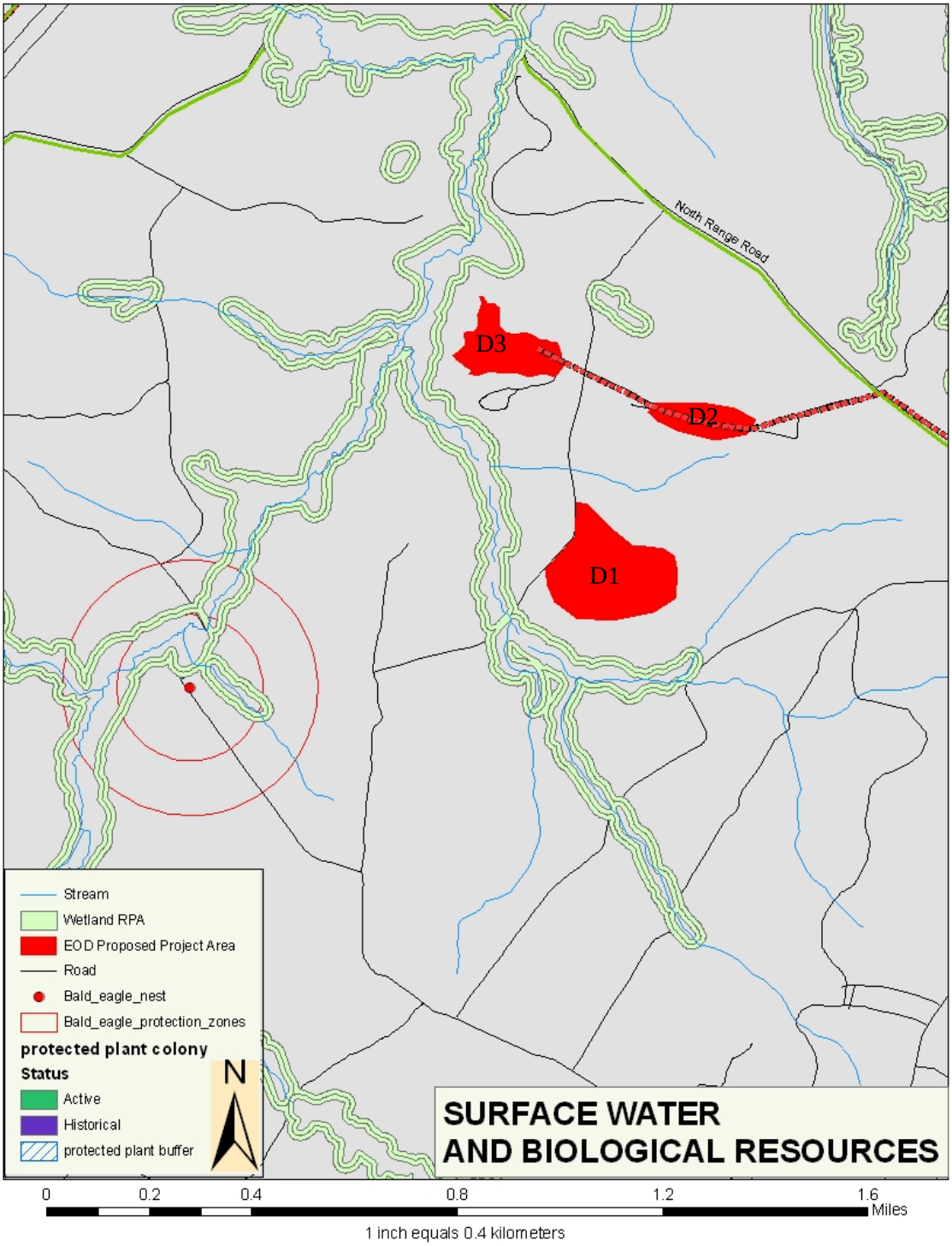
3.6.1.1 Surface Water

The northern portion of Fort A.P. Hill is drained by tributaries of the Rappahannock River, and the southern portion is drained by tributaries of the Mattaponi River. Both rivers ultimately drain to the Chesapeake Bay. The proposed relocated EOD demolition sites are in the northern and eastern portion of Fort A.P. Hill within the Rappahannock River drainages. Figure 3-10 shows the surface water features of the proposed relocation area at Fort A.P. Hill.

The proposed action area is in the Mill Creek watershed. Most of the proposed action area is drained by Peumansend Creek and its tributaries to the south (FAPH GIS 2009). Peumansend Creek flows in a northerly direction toward the confluence with Mill Creek approximately 0.4 miles north of the proposed D1 relocation demolition site.

Mill Creek flows generally northward outside the northern boundary of the proposed relocated EOD demolition sites (Figure 3-5), crosses U.S. Route 17 at the boundary of Fort A.P. Hill, and then continues north about another 0.75 to 1 mile to its confluence with the Rappahannock River (VDEQ 2008a).

Figure 3-5 Surface Water and Biological Resources



Water Quality. The Fort A.P. Hill Integrated Natural Resources Management Plan (INRMP) (FAPH 2008) states that the water quality of the streams, ponds, and lakes within the installation is generally within the expected range for coastal plain water bodies. Water quality data for the lower Rappahannock River indicate that the watershed encompassing Caroline County meets the goals of the Clean Water Act (USACE Mobile District 2007). Streams that could be affected most directly by the proposed relocated EOD demolition sites are Mill Creek and Peumansend Creek and their associated tributaries. Neither Mill Creek nor Peumansend Creek is identified on Virginia's 2006 303(d) list of impaired waters as having violated Virginia water quality standards (VDEQ 2008b). The VDEQ surface water quality monitoring stations closest to the proposed relocated Project Area is on Mill Creek, near its mouth and north of U.S. Route 17 outside the installation (VDEQ 2008a).

Storm Water Management. Construction storm water impacts are regulated through the installation's storm water general permit for construction activities under the VSMP. Fort A.P. Hill is primarily used as a training area, and therefore storm water management activities are usually site-specific. Storm water management activities typically include implementing BMPs and erosion and sediment control structures to reduce runoff and sedimentation. Storm water pollution prevention plans for construction areas and other land disturbance activities on Fort A.P. Hill have been developed to maximize the potential benefits of pollution prevention and sediment and erosion control measures. These plans provide the framework for reducing soil erosion and minimizing pollutants in storm water during construction, and they include the development and implementation of storm water controls and other BMPs (USACE Mobile District 2007).

3.6.1.2 Hydrogeology/Groundwater

Fort A.P. Hill is in Virginia's Coastal Plain, about 40 miles west of the Chesapeake Bay between the Rappahannock and Mattaponi Rivers. The regional hydrogeologic framework of the Virginia Coastal Plain is described by eight major confined aquifers, eight major confining units, and an uppermost water table aquifer, all of varying permeability and water quality. Groundwater movement through the unconfined and confined aquifers is generally lateral; some movement occurs vertically. Groundwater is discharged laterally into a variety of water bodies, including the Chesapeake Bay and the Atlantic Ocean. Recharge of the groundwater system occurs in outcrop zones where precipitation and surface water can infiltrate into aquifers. The groundwater system below Fort A.P. Hill is the sole source of potable water for the installation. The average seasonal depth to groundwater on the installation is 24 to 26 feet.

3.6.1.3 Floodplains and Wetlands

In the northwestern of the proposed relocation area, 100-year floodplains designated by the Federal Emergency Management Agency (FEMA) occur along Peumansend Creek (Figure 3-10)..

Wetlands occur in the proposed relocation area, as depicted in Figure 3-10. National Wetlands Inventory mapping indicates areas of palustrine emergent, palustrine forested, and palustrine scrub-shrub wetlands in swales and along streams within the proposed relocation area and associated with Peumansend Creek, and its intermittent and perennial tributaries. Using National Wetlands Inventory survey data and the preliminary design for the placement of the proposed demo sites and range access road, it does not appear that there will be any encroachment within the RPA or impacts to wetlands. Once exact dimensions of the demolition sites and range access roads are designed, a field study will be completed to determine the extent of jurisdictional wetlands that may occur within the proposed project area.

3.6.1.4 Chesapeake Bay Initiatives and Coastal Zone Management

The federal Coastal Zone Management Act (CZMA) (Title 16 of the *United States Code* [U.S.C.], sections 1451 *et seq.*) was enacted to preserve, protect, develop, and where possible restore or enhance the resources of the coastal zone of the United States. Provisions under the CZMA assist states in developing coastal management programs to manage and balance competing uses of the coastal zone. As it applies to Fort A.P. Hill, the CZMA contains a federal consistency requirement under which federal actions must be consistent to the maximum extent practicable with the enforceable policies of Virginia's federally approved Coastal Zone Management Program (CZMP). This program focuses on problems associated with polluted runoff, habitat protection, riparian buffers, resource protection areas (RPAs), wetlands, fisheries, sustainable development, waterfront redevelopment and encroachment, septic systems, erosion and sediment control, and air pollution control.[3] Under requirements of Virginia's Chesapeake Bay Preservation Act (CBPA), Caroline County has established RPAs that include 100-foot buffer zones and contiguous wetlands along perennial streams and other waterways (Caroline County 2008a, 2008b, 2008c). A coastal zone consistency determination for the proposed relocation area is provided in this SEA in Appendix C.

To protect the water resources within Fort A.P. Hill, timber harvesting within the riparian forest buffer zone is carefully controlled. No timber harvests will occur within the 100-foot Chesapeake Bay RPA buffer, as specified in current Fort A.P. Hill policy which is more stringent than Virginia's CBPA regulation. The Fort A.P. Hill INRMP includes additional information on the installation's program for maintaining riparian areas and RPAs (FAPH 2008).

3.6.2 Environmental Consequences

3.6.2.1 Proposed Action

Short- term minor adverse effects on water resources would be expected. Construction of access roads, bunkers and demolition pits as a result of the proposed action could increase runoff due to a minor increase in impervious surface area; soil disturbance, erosion, and compaction during construction and during subsequent training operations; and increases in sediment and pollutant loads. One gravel road to access demolition site D1 will be constructed. Roads to access sites D2 and D3 already exist. Proposed facilities would be sited to avoid sensitive environmental areas, including RPAs, to the maximum extent practicable. Federal and state requirements for avoidance, minimization, and mitigation would be met for any development affecting wetlands and surface waters. Specific information is provided below.

Surface Water Quality and Storm Water Management

Short-term minor and long-term negligible adverse effects on surface waters and storm water would be expected. The proposed action would involve constructing an access gravel roadway and clearing and grubbing wooded areas (Knight 2008) for D1. Fort A.P. Hill would minimize adverse impacts by using silt fencing, straw bales, and other Virginia-recommended construction BMPs that would be incorporated into sediment and erosion control and storm water runoff plans. All construction work would comply with the requirements of the installation's VSMP permit and state and local erosion and sediment control regulations (VDCR 1992; Caroline County 2008b).

[3] *RPAs* are environmentally sensitive corridors alongside streams, rivers, and other waterways that act as natural buffers to protect water quality by filtering pollutants out of storm water runoff, reducing the volume and velocity of storm water runoff, and inhibiting erosion.

In the long term, storm water runoff from cleared and compacted surfaces could contain nutrients, metals, dissolved solids, hydrocarbons, and other contaminants that could enter surface waters. Given the limited amount of impervious surface and cleared areas associated with the proposed action and that Virginia-approved runoff controls would be used, it is expected that the quantities of additional surface water runoff and pollutants generated would be negligible.

Hydrogeology/Groundwater

Long-term negligible adverse effects would be expected. The proposed action could result in minor increases in loads of pollutants (primarily from small amounts of chemical residues that remain in the soil after explosives training exercises). Some of the pollutants could reach groundwater. Because of the limited area on the proposed relocation area that would be disturbed during construction and used for ongoing EOD training, impacts on groundwater resources would be expected to be negligible.

Floodplains and Wetlands

Long-term minor adverse effects on riparian areas would be expected from implementation of the proposed action. Wetlands occur in the proposed relocation area, as depicted in Figure 3-5. National Wetlands Inventory mapping indicates areas of palustrine emergent, palustrine forested, and palustrine scrub-shrub wetlands in swales and along streams within the proposed relocation area and associated with Peumansend Creek, and its intermittent and perennial tributaries (though operational activities would take place outside sensitive riparian areas on all training sites Indirect effects on riparian areas (as runoff from detonation points, facilities, and roads) would be minimal or negligible. No construction or disturbance would occur within the 100-year floodplain. Fort A.P. Hill would complete a Joint Permit Application for wetland impacts, as required by the U.S. Army Corps of Engineers and VDEQ; and would comply fully with EO 11988 (*Floodplain Management*) by ensuring that its Environmental Division would review all project and facility plans for compliance with the EO, Army and installation environmental policies, and applicable laws and regulations.

Chesapeake Bay and Coastal Zone Management

No adverse effects on the Chesapeake Bay or the Virginia CZMP would be expected. Construction and other activities associated with the proposed action would occur in a manner consistent with the enforceable policies of the Virginia CZMP, to the maximum extent practicable. The CZMA requires identification of potential effects of federal actions on a state's coastal zone program. The consistency of the proposed action with Virginia's CZMP has been assessed, and the consistency determination is provided in this SEA in Appendix C.

Best Management Practices

BMPs to control storm water runoff and erosion and to protect surface waters, groundwater, and the Chesapeake Bay would be implemented by Fort A.P. Hill in full accordance with applicable laws and regulations and installation policies for resource protection. Impacts on wetlands would be avoided by placing any construction activities to avoid wetlands. All storm water construction activities would be done in accordance with the CBPA.

Cumulative Effects

No cumulative effects on water resources or the Chesapeake Bay would be expected. Other future projects on Fort A.P. Hill could result in erosion and sedimentation in streams, and separate environmental documents would analyze the effects of those actions. Any sediment or other pollutants from streams on Fort A.P. Hill and in the area would enter the Chesapeake Bay from the Rappahannock River. Mixing in the river and bay would render any potential for a cumulative water quality effect negligible and immeasurable.

3.6.2.2 No Action Alternative

Incorporation. This SEA incorporates by reference the water resources discussion related to the 2,059-acre EOD training area contained in the Environmental Assessment of Constructing and Operating an Explosive Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia. Specific information is provided below.

Short-term minor and long-term negligible adverse effects on surface water and groundwater quality would be expected from implementation of the No Action Alternative. Construction of facilities for and use of the 2,059-acre EOD training area could increase runoff by adding small amounts of impervious surface area and developed areas, such as roads, from which increased runoff would be expected; and it could increase soil erosion and sediment and pollutant loads in storm water runoff. Minor quantities of sediment and pollutants from vehicles and explosives would continue to be added to storm water runoff during operation of the EOD field training area and potentially after its operation would cease. Proposed facilities would be sited to avoid sensitive environmental areas, such as riparian areas and wetlands, to the maximum extent practicable.

3.7 Biological Resources

3.7.1 Affected Environment

3.7.1.1 Vegetation

Fort A.P. Hill's natural vegetation lies within a belt of natural forest cover composed of mixed southern pine and hardwoods on the uplands and nearly pure hardwoods on the creek bottoms. Typical species include loblolly pine (*Pinus taeda*), Virginia pine (*P. virginiana*), yellow-poplar (*Liriodendron tulipifera*), oaks (*Quercus* spp.), and hickories (*Carya* spp.).

The proposed relocated EOD demolition site is within Fort A.P. Hill's range complex, which is comprised of predominately pine forest with some interspersed hardwood stands. Along Peumansend Creek to the west, open water is very limited in the wetlands and consists primarily of the stream channel. Approximately 0.9 miles northwest of the proposed relocation area is a Commonwealth of Virginia-recognized conservation site, the Rollins Fork Ravines site. The site was designated as a conservation site because the entrenched ravines of this site support a small but impressive fragment of late seral old growth hardwoods.

3.7.1.2 Wildlife

The cooperative agreement between Fort A.P. Hill and the U.S. Fish and Wildlife Service lists 130 avian species, 39 species of mammals, and 40 recorded species of fish present on the installation. Limited data are available on the number of reptile and amphibian species, but 48 species are thought to occur in this area.

Common mammal species include white-tail deer (*Odocoileus virginiana*), opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), muskrat (*Ondatra zibethica*), woodchuck (*Marrnota monax*), raccoon (*Procyon lotor*), eastern mole (*Scalopus aquaticus*), eastern gray squirrel (*Sciurus carolinensis*), cottontail rabbit (*Sylvilagus floridanus*), gray fox (*Urocyon cinereoargenteus*), and red fox (*Vulpes fulva*).

Bird species common to the area inhabit the forests and clearings of Fort A.P. Hill. Representative species include red-tailed hawk (*Buteo jamaicensis*), great-horned owl (*Bubo virginianus*), American goldfinch (*Carduelis tristis*), downy woodpecker (*Picoides pubescens*), Eastern wood-pewee (*Contopus virens*), American crow (*Corvus brachyrhynchos*), red-eyed vireo *(Vireo olivaceus*), yellow warbler (*Dendroica petechia*), gray catbird (*Dumetella carolinensis*), ovenbird (*Seiurus aurocapilla*), wood thrush (*Hylocichla mustelina*), wild turkey (*Meleagris gallopavo*), mourning dove (*Zenaida macroura*), song sparrow (*Melospiza melodia*), northern mockingbird (*Mimus polyglottos)*, Carolina chickadee (*Poecile carolinensis*), white-breasted nuthatch (*Sitta carolinensis*), Carolina wren (*Thryothorus ludovicianus*), and eastern kingbird (*Tyrannus tyrannus*). All of these species would be expected to be present primarily in upland areas.

Common species encountered in wetlands and open water areas include wood duck (*Aix sponsa*), mallard (*Anas platyrhynchos*), great blue heron (*Ardea herodias*), red-winged blackbird (*Agelaius phoeniceus*), green heron (*Butorides virescens*), and belted kingfisher (Ceryle *alcyon*).

Reptile and amphibian species expected to occur at Fort A.P. Hill include the northern copperhead (*Agkistrodon contortrix mokasen*), northern black racer (*Coluber constrictor constrictor*), eastern kingsnake (*Lampropeltis getulus*), eastern garter snake (*Thamnophis sirtalis*), eastern box turtle (*Terrapene carolina*), snapping turtle (*Chelydra serpentina*), spotted salamander (*Ambystoma maculaturn*), red-spotted newt (*Notophtalmus viridescens*), American toad (*Bufo arnericanus*), spring peeper (*Pseudacris crucifer*), and bullfrog (*Rana catesbieana*).

Surveys at Fort A.P. Hill have identified 40 species of fishes that inhabit the installation's streams, lakes, and ponds. Species found in streams include redfin pickerel (*Esox americanus*), mud sunfish (*Acantharchus pomotis*), creek chub (*Semotilus atromaculatus*), tessellated darter (*Etheostoma olmstedi*), and American eel (*Anguilla rostrata*).

3.7.1.3 Sensitive Species

Several rare plant species that receive legal protection at the federal or state level have been documented to occur on Fort A.P. Hill. They include swamp pink (*Helonias bullata*), small whorled pogonia (*Isotria medeoloides*), American ginseng (*Panax quinquefolius*) and New Jersey Rush (*Juncus caesariensis*). Both swamp pink and small whorled pogonia are listed federally as threatened and in Virginia as endangered. American ginseng and New Jersey Rush have no federal status but is state-listed as threatened. The Division of Natural Heritage documented 16 plants, 5 invertebrates, and 1 amphibian species on the installation that are considered rare.

Among the four sensitive plant species mentioned, only American ginseng has been documented from the Mill Creek Slopes conservation area (Fleming and Van Alstene 1994). The proposed EOD demolition areas were surveyed on June 2, 2009 for threatened and endangered plants by installation biologists. Sites D2 and D3 are existing range facilities that are utilized for military training activities which also undergo routine site maintenance (e.g., vegetation mowing or prescribed burning). Wildfires are also common occurrences. Sites D2, and D3 are not habitat for any federal or state listed species given the land use and land management disturbances typical of these sites. Site D1 is currently an undeveloped site, consisting of a regenerating forest. The site was harvested in 1994 as part of salvage operation following a SPBB outbreak. The overstory of the then pine-dominated stand was heavily cut. The site has been subsequently burned at least once with the current vegetation consisting of a sparse pine hardwood overstory (<25% canopy cover), with herbaceous species and hardwood coppice in the understory. The recently topkilled stems of the hardwood regeneration are still present. The site is not habitat for any federal or state listed species given the heavy land disturbance history of the site. Regarding mammal species, no federal or state-listed threatened or endangered species or species of concern are known to occur on Fort A.P. Hill. Two state mammal species of special concern, the river otter (*Lontra* [= *Lutra*] *canadensis*) and the star-nosed mole (*Condylura cristata*), have been collected on the installation.

VDCR's Natural Heritage Program undertook a comprehensive biological diversity inventory on Fort A.P. Hill in 1993 and identified two bird species on the installation (Fleming and Van Alstene 1994), the federally listed threatened bald eagle and state-listed threatened Bachman's sparrow (*Aimophila aestivalis*). One active bald eagle nest (CA-01-05) is in the vicinity of the proposed relocated EOD demolition site (Figure 3-10). Fort A.P. Hill protects the nests with primary and secondary protection zones that extend 250 and 440 yards, respectively, from the nests. Activities prohibited in primary protection zones include land clearing, clear cutting, and building, road, and trail construction (FAPH 2008). Within secondary protection zones, major habitat alterations (commercial, industrial, and residential development) are prohibited. During the breeding season (July 16 to November 14) people are not allowed in primary protection zones and major activities are prohibited in secondary protection zones. The nest near the proposed Project Area is located approximately 1,370 yards southwest from the proposed location for D1. Eagles at this particular nest are exposed to peak large caliber weapons and demolition noise levels due to the current demolition training at DS 70A and other surrounding ranges.

No reptile or amphibian federal or state-listed threatened or endangered species or federal species of concern are known to occur at Fort A.P. Hill. The carpenter frog (*Rana virgatipes*), a state species of special concern, is known only from the Mattaponi drainage and thus would be restricted to southern areas of the installation.

According to mollusk distribution maps, two mollusk species with special status (i.e., federal or state threatened, endangered, or of concern) have been recorded in counties near Fort A.P. Hill— the Atlantic pigtoe (Fusconaia masoni) and the green floater (Lasmigona subviridis). The green floater is listed as a state species of special concern and is historically known from Fort A.P. Hill. A review of available literature, however, indicated that there have been no recent records of these species occurring in Caroline County.

3.7.2 Environmental Consequences

3.7.2.1 Proposed Action

Long-term minor adverse effects on biological resources would be expected from implementation of the proposed action. It is anticipated that of the 42 acres in the proposed EOD demolition site area, about 10 acres of land would be cleared for an access road and for D1 demolition pit and bunker. Sites D2 and D3 are already cleared and operating as live-fire ranges. The clearing at D1 would be expected to increase edge species of vegetation and could create favorable conditions for invasive or exotic species to establish themselves. The sites would be monitored for invasive and exotic species of concern, however, and overall the effect on the installation's vegetation would be minor.

Wildlife throughout the proposed project area is currently exposed to high noise levels from demolition and training and should be accustomed to the noise levels. Research on noise impacts on wildlife indicates that there is great variability from species to species in response to different noise sources (USAF and USDOI 1988, Radle 2007). Wildlife, forest, and protected species management measures and objectives contained in the Fort A.P. Hill INRMP, protected species management plans, and special area management plans would be adhered to during development and operation of the EOD demolition range area.

No adverse effects on sensitive animal or plant species would be expected from implementation of the proposed action. No training activities would occur within eagle nest protection zones. Eagles at the nearby nest are currently exposed to demolition noise levels. Weapons-testing noise, however, has been found to not substantially affect the behavior of roosting or nesting bald eagles and to not influence eagle reproduction at the population level (Brown et al. 1999). No prohibited activity is proposed to occur within the primary and secondary nest protection zones of the nearby eagle nest.

Best Management Practices

Best Management Practices to minimize, avoid, or compensate for adverse effects on biological resources due to implementing of the proposed action would not be required. Fort A.P. Hill would, however, continue to implement ongoing natural resource protection programs in its INRMP, as well as Army and federal policies for environmental protection.

Cumulative Effects

No cumulative effects on biological resources would be expected. Other future projects on Fort A.P. Hill could affect similar habitats and species, but adherence to the installation's policies for resource protection and federal and state laws and regulations for sensitive species protection, wetland protection, and sediment and erosion control would be expected to limit the individual and cumulative effects of all projects.

3.7.2.2 No Action Alternative

Incorporation. This SEA incorporates by reference the biological resources discussion related to the 2,059-acre EOD training area contained in the Environmental Assessment of Constructing and Operating an Explosive Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia. Specific information is provided below.

Long-term minor adverse effects on vegetation and wildlife would be expected from implementation of the No Action Alternative. Development of the 2,059-acre EOD area would require site clearing and construction of facilities on previously undisturbed and disturbed land. Some vegetation would be cleared to develop ranges and cleared areas would be maintained with minimal vegetation either mechanically or by continual use of the training sites, or both. Wildlife in the immediate vicinity would be temporarily displaced. Sensitive habitats would be avoided. Wildlife in the area would be newly exposed to high noise levels from the demolitions training and different species would be expected to respond differently to the noise, ranging from taking brief notice of the noise to behavioral and physiological changes that could reduce foraging, predator avoidance, and reproductive success. Over time, many species would be expected to become accustomed to the new noise levels.

No impacts on wetlands at the proposed 2,059-acre EOD area would be expected. Fort A.P. Hill has a policy to protect all wetlands and streams by maintaining 100-foot buffers around such areas.

3.8 Cultural Resources

3.8.1 Affected Environment

3.8.1.1 Prehistoric and Historic Background of Fort A.P. Hill

Discussions of the prehistoric and historic periods of Fort A.P. Hill are contained in the installation Integrated Cultural Resources Management Plan (ICRMP) (Williams 2008) and are incorporated into this EA by reference.

3.8.1.2 Cultural Resources Compliance at Fort A.P. Hill

Cultural resource compliance activities at Fort A.P. Hill to consider effects on historic properties and to consult with potentially interested Native American tribes are conducted in compliance with applicable federal legislation and state guidelines. Fort A.P. Hill has an ICRMP that directs cultural resource management actions and decisions for the installation (Williams 2008). The ICRMP contains a summary of the cultural resources identified on the installation, preservation and maintenance strategies for archaeological and architectural resources, cultural resource management strategies and planning, and standard operating procedures to ensure the protection of resources and consideration of effects on resources resulting from military use of the installation. A Programmatic Agreement (PA) addressing BRAC activities and the protection of historic properties was executed in August 2008 among the U.S. Army Garrison Fort A.P. Hill, the Virginia State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation.

3.8.1.3 Cultural Resources at Fort A.P. Hill

Fort A.P. Hill has undergone extensive studies to identify historic properties, including archaeological sites and architectural properties. All buildings and structures dating to 1959 and older have been recorded and evaluated for eligibility for listing on the National Register of Historic Places (NRHP). In total, 97 buildings and structures have been inventoried, mostly relating to the World War II construction phase of the installation. Three of the recorded architectural resources are considered eligible or potentially eligible for listing on the NRHP.

Fort A.P. Hill has completed inventories of about 25 percent of the installation to identify prehistoric and historic archaeological resources (FAPH GIS 2006). These include mostly Phase I surveys to identify sites, some Phase II testing of sites to determine areal extent and eligibility for NRHP listing, and Phase III data recovery excavations to mitigate potential effects.

Fort A.P. Hill conducted archaeological inventories of the original 1,034-acre EOD area in 2006 in preparation for the BRAC realignment. The proposed original EOD area underwent three separate inventories, resulting in full Phase I survey coverage (Roberts 2006, Versar 2006). The installation completed additional Phase I archaeological surveys of the four areas proposed to be added to the original EOD area from March through May 2008 (Berger 2008).

There are 21 known historic cemeteries on Fort A.P. Hill (CRI 1999). When the land for Fort A.P. Hill was acquired by the government in the mid-20th century, all known human remains were reinterred off the installation. At that time, only remains associated with marked graves, headstones, footstones, and fences were removed. It is probable that some of the cemeteries still contain graves with human remains. These areas are marked as *sensitive areas* on the installation geographic information system database.

Cultural Resources in the Area of Potential Effect

None of the three architectural properties on the installation that are eligible or potentially eligible for listing on the NRHP are within the proposed Project Area.

Portions of the Port Royal Rural Historic District (VDHR No. 284-0044) fall within the area of potential effect. However based on noise evaluations, there will be no effects to historic properties within the Historic District.

No subsurface cultural resource investigations have been authorized in the proposed Project Area as the area is located in an active demolition range with a high potential for unexploded ordnance. No previously recorded archaeological sites are located within the Project Area. Historical records research identified one map-projected former cemetery location and two map-projected house sites located within the Project Area. The map-projection of the former cemetery location and one of the house sites places them within previously developed portions of the Project Area. The second map-projected house site is located in a portion of the Project Area where development is not currently planned. As the cemetery has been removed and the cemetery and house site locations have been subsequently developed, these locations have a low potential for intact deposits that may be eligible for inclusion in the NRHP. Furthermore, based on (1) the previous development and use of the Project Area as an active demolition range and (2) the general relief of the proposed new development areas, the Project Area has an overall low potential for historic properties.

Ongoing consultation with the Virginia SHPO would be coordinated under Section 106 of the NHPA. Compliance with Section 106 would be completed before any new construction or ground-disturbing activities took place in the Project Area.

3.8.1.4 Native American Resources at Fort A.P. Hill

There are no known resources on Fort A.P. Hill that are considered of traditional importance to any tribe.

3.8.1.5 Pending Investigations and Compliance

Fort A.P. Hill conducts its cultural resource management in accordance with applicable federal legislation and with guidance from the ICRMP. A PA to address BRAC activities to occur at the installation was executed in 2008. Further work would be done as necessary to inventory and evaluate cultural resources in the Project Area, and the results would be provided to the Virginia SHPO for consultation under Section 106 of the NHPA. Any adverse effects on historic and archeological resources would be avoided, minimized, or mitigated, as determined in consultation with the SHPO and in accordance with the installation's ICRMP and the PA.

3.8.2 Environmental Consequences

3.8.2.1 Proposed Action

No adverse effects on cultural resources at Fort A.P. Hill would be expected within the project area as a result of implementing the proposed action. Although unanticipated adverse effects on historic properties from the EOD construction and operational activities are a possibility, compliance with applicable federal legislation, the installation's ICRMP, and the installation's PA would ameliorate any unanticipated effects to less than significant. Additionally based on the noise evaluation, the proposed action would have no effects on historic properties within the area of potential effect.

Best Management Practices

No specific BMPs to protect cultural resources would be required during implementation of the proposed action. All policies and procedures for cultural resources protection would be adhered to in accordance with the installation's ICRMP and the PA. If avoidance and protection of historic properties were not feasible for any specific activity, measures would be implemented in accordance with Section 106 of the NHPA, the installation's ICRMP, and the PA to mitigate adverse effects on the sites.

Cumulative Effects

No cumulative effects on cultural resources would be expected. Adverse effects on NRHP-eligible cultural resources could result if such resources are physically disturbed during the development of BRAC facilities or training exercises. Federal legislation, the Fort A.P. Hill ICRMP, and the PA would be followed in all cases, including construction for BRAC, the AWG range, and other projects on Fort A.P. Hill, to compensate for any impacts. Thus, any adverse cumulative impacts that would occur would be considered minor.

3.8.2.2 No Action Alternative

Incorporation. This SEA incorporates by reference the cultural resources discussion related to the 2,059-acre EOD training area contained in the Environmental Assessment of Constructing and Operating an Explosive Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia. Specific information is provided below.

Implementation of the No Action Alternative would likely have no significant impacts on historic properties at Fort A.P. Hill. Although unanticipated adverse effects on historic properties from development of a 2,059-acre EOD area are a possibility, compliance with applicable federal legislation,

procedures in the installation's ICRMP, and the BRAC PA would ameliorate any unanticipated effects to less than significant.

3.9 Socioeconomics

3.9.1 Affected Environment

The region of influence (ROI) for the Fort A.P. Hill socioeconomic environment is defined as Caroline, Essex, King George, Spotsylvania, and Stafford counties and the City of Fredericksburg, Virginia. The ROI covers an area of 1,653 square miles in northeastern Virginia. Fort A.P. Hill is within the boundaries of Caroline County along the I-95 corridor between two major metropolitan areas: Washington, DC, and Richmond, Virginia. The towns of Bowling Green (just south of the installation) and Port Royal (just north of the installation) in Caroline County are the closest towns to the installation, and they provide community support to the installation. Fredericksburg is about 20 miles north of Fort A.P. Hill's main gate. These communities and the counties surrounding Fort A.P. Hill have a lengthy history of support for the installation (FAPH 2007b).

The baseline year for socioeconomic data is 2007. Where 2007 data are not available, the most recent data available are presented.

3.9.1.1 Economy

Historically, Caroline County's major private industries have been tied directly to natural resources. These include agriculture and forestry products and nearly 51,604 acres of farmland. Principal crops are soybeans, wheat, barley and corn. There are over 261,700 acres of commercial forestland, which predominantly include loblolly pine, short leaf pine, oak and hickory. Significant mineral resources include sand, gravel, clay, mica and beryl. In addition to the expansion of some resource-based industries, Caroline County is seeing a new wave of activity from a variety of businesses and industries and growth in Caroline County has significantly changed in recent years.

The population areas surrounding Fort A. P. Hill tend to have lower incomes than Virginia residents as a whole; however, this fact most likely reflects the rural nature of the county and the lag in growth compared to its more rapidly urbanizing neighbors such as Stafford and Spotsylvania Counties.

3.9.1.3 Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires Federal agencies to identify and address disproportionate adverse effects of their programs, policies and activities on minority and low-income populations.

The Region of Influence (ROI) for this proposed action lies within the confines of Fort A. P. Hill. The training mission applies only to facilities that lie within the installation boundaries and has no applicability to resources that are located on lands outside Fort A. P. Hill. No low income or minority populations exist on the installation or immediately adjacent to the proposed EOD demolition site.

3.9.1.4 Protection of Children

Executive Order 13045 seeks to protect children from disproportionately incurring environmental health or safety risks that might arise as a result of installation policies, procedures, programs, activities and standards. The training lands and ranges of Fort A. P. Hill are restricted to authorized personnel only and access is limited, excluding the entry of unauthorized adults and children.

3.9.2 Environmental Consequences

3.9.2.1 Proposed Action

Economic Development

Under the proposed action, short and long-term minor beneficial effects are expected for economic development as described in the Environmental Assessment of Constructing and Operating a 2,059-acre Explosive Ordnance Disposal Field Training Area.

The economic benefits resulting from timber sales to support the relocation of the three demolition sites would be considered minor. If a commercial timber sale is generated from the land that would be cleared, a portion of the proceeds might contribute to the funding of county schools and roads through the Army Timber Management Fund; 40 percent of annual timber sale profits are awarded to county schools.

Sociological Environment

Housing. Existing conditions for housing as described in the Environmental Assessment of Constructing and Operating a 2,059-acre Explosive Ordnance Disposal Field Training Area would continue under the proposed action.

Law Enforcement, Fire Protection, Medical Services. Long-term minor adverse effects would be expected. The installation has only one medical crew. Travel time from Fort A.P. Hill's medical center to proposed Project Area at DS 70A can take up to 20 minutes, with an additional 40 minutes or more if the patient needs to be transported to a hospital. An additional medical crew would be needed. Ideally, a new medical crew would be collocated with the fire engine company in the Heth area (Directorate of Emergency Services, personal communication, 2006). Siting a medical crew at the Heth area would reduce travel time to the demolition site. Long-term minor adverse effects on medical care and response time would be expected if a second medical crew were not acquired.

No adverse effects on police or fire services would be expected. The proposed action would not change the fire department or police services requirements.

Schools. No effects would be expected. The proposed action would not affect local schools.

Family Support, Services, and Recreation. Existing conditions for family support, services and recreation as described in the Environmental Assessment of Constructing and Operating a 2,059-acre Explosive Ordnance Disposal Field Training Area would continue under the proposed action.

Environmental Justice

No effects would be expected. The proposed training and construction activities at Fort A.P. Hill are not actions that have the potential to substantially affect human health or the environment by excluding persons, denying persons benefits, or subjecting persons to discrimination because of their race, color, national origin, or income level.

Protection of Children

No effects would be expected. The proposed training and construction activities would be sited in Fort A.P. Hill's training lands and ranges. The training lands and ranges of Fort A.P. Hill are restricted to authorized personnel only, and access is limited, excluding the entry of unauthorized adults and children.

Best Management Practices

No BMPs would be necessary to reduce the adverse impacts of the proposed action on socioeconomics.

Cumulative Effects

Long-term minor beneficial cumulative economic effects would be expected. The operation of FAPH continues to economically benefit the ROI by providing jobs, income, and business sales through the purchase of goods and services. The proposed construction and operation of the demolition range at FAPH would provide minor short- and long-term beneficial economic effects to the region in the form of additional employment, income, and sales. Other ongoing or proposed future development projects in the ROI include Virginia Department of Transportation road and bridge construction projects; residential development; the opening of two new millworks, two concrete companies, and a new complex for M.C. Dean, a systems integration and engineering firm in Caroline County; a new concrete manufacturing plant in King George County; and the BRAC action at Quantico Marine Corps Base in Stafford County.

In addition to the proposed construction and operation of the training range at FAPH, these other projects would generate employment, income, and business sales in the ROI, resulting in long-term cumulative beneficial economic effects.

3.9.2.2 No Action Alternative

Incorporation. This SEA incorporates by reference the socioeconomics discussion related to the 2,059-acre EOD training area contained in the Environmental Assessment of Constructing and Operating an Explosive Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia. Specific information is provided below.

Economic Development

Long-term minor beneficial effects on economic development would be expected from implementation of the No Action Alternative. The expenditures to establish the range and construct the range facilities, as well as the new employment associated with the operation of the training area, would increase ROI sales volume, employment, and income. These changes would fall within historical fluctuations (i.e., within the RTV range) and be considered minor.

Sociological Environment

Long-term minor adverse effects on medical services would be expected from implementation of the No Action Alternative. Travel time from Fort A.P. Hill's medical center to the Training Areas 26, 27 and 28 areas can take up to 20 minutes, with an additional 40 minutes or more if the patient needs to be transported to a hospital. An additional medical crew would be needed. Adverse effects on medical care and response time would be expected if a second medical crew is not acquired.

No effects on housing, law enforcement, fire protection, schools, family support, services, or recreation would be expected from implementation of the No Action Alternative.

Environmental Justice

No effects on environmental justice would be expected from implementation of the No Action Alternative. The construction and operation of the training range on Fort A.P. Hill is not an action that has the potential to substantially affect human health or the environment by excluding persons, denying persons benefits, or subjecting persons to discrimination because of their race, color, national origin, or income level.

Protection of Children

No effects on the protection of children would be expected from implementation of the No Action Alternative. The No Action Alternative construction and training activities would be sited in Fort A.P. Hill's training lands and ranges. The training lands and ranges are restricted to authorized personnel only and access is limited, excluding the entry of unauthorized adults and children.

3.10 Transportation

3.10.1 Affected Environment

Highway access to Fort A.P. Hill is available regionally via I-95; Routes 1, 17, and 301; and Route 2 (see Figure 2-1). Route 301 provides access to the main entrance of the installation; it is a four-lane, north-south route that bisects Fort A.P. Hill. The primary transportation network within Fort A.P. Hill consists of roads and streets that act as main distribution arteries and provide access to all functional areas. Secondary and tertiary light-duty roadways provide access between and within various functional areas. Wide, clear trails for the use of heavy tactical vehicles are adjacent to some roads.

The closest city to Fort A.P. Hill served by rail transportation, via Amtrak and Virginia Railway Express, is Fredericksburg, Virginia. No public transit access or bus service is available at Fort A.P. Hill. The Fredericksburg Regional Transit provides service at Bowling Green, Virginia (FRED 2006).

Fort A.P. Hill has one Army Air Field, one drop zone, one assault airstrip, and many authorized landing or pick-up zones to support airborne and aviation training for both fixed-wing and rotary aircraft. Fort A.P. Hill does not support private access to the installation by air.

3.10.2 Environmental Consequences

3.10.2.1 Proposed Action

Short- and long-term minor adverse effects on vehicle-based transportation resources at Fort A.P. Hill would be expected from implementation of the proposed action. These effects would result from using on-road construction vehicles during the periods of construction and long-term operational activities on the bussing of Army personnel to and from the EOD field training area to the proposed relocated demolition sites. No effects on railway and air transportation systems would be expected, and effects on the public transportation system would be negligible.

Construction Traffic

Traffic at Fort A.P. Hill would increase from construction vehicles. The effects would be temporary, ending when the construction phase of the proposed action was completed. The local on-post and off-post road infrastructure is sufficient to support any increase in construction vehicle traffic.

Operational Traffic

Minor long-term increases in on-post traffic would be expected from operational activities under the proposed action. Several busses of new trainees would need to be transported from the EOD field training area to the proposed Project Area. Minor improvements to existing roadways to make them serviceable would be expected. No major new on-post roadways would be expected and one new tertiary roadway would be established for access to D1 within the proposed EOD demolition range.

Best Management Practice

Any effects due to construction traffic would be minimized by directing all construction vehicles to access the installation via the most appropriate gate and limiting construction vehicle movement during peak traffic hours. All construction vehicles would be equipped with backing alarms, two-way radios, and "Slow Moving Vehicle" signs when appropriate. Access to the proposed EOD demolition site area would be coordinated through Range Control to ensure personal safety and a lack of conflict with ongoing training and range operations.

Cumulative Effects

No adverse cumulative effects on transportation resources would be expected. Construction of the proposed EOD facilities, establishment of the Asymmetric Warfare Group (AWG) ranges, and establishment of the Naval Surface Warfare Explosive Center of Excellence (NSWECE) would occur simultaneously, and other future projects could also occur concurrently. Traffic attributable to these actions would also occur concurrently. Other construction and development projects would produce some measurable amounts of traffic. The effects on transportation resources associated with the proposed action would be minor and would not be expected to cause adverse cumulative effects.

3.10.2.2 No Action Alternative

Incorporation. This SEA incorporates by reference the transportation discussion related to the 2,059-acre EOD training area contained in the Environmental Assessment of Constructing and Operating an

Explosive Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia. Specific information is provided below.

Short- term minor and long-term major adverse effects on vehicle-based transportation resources at Fort A.P. Hill would be expected. These effects would be directly related to using on-road construction vehicles during the periods of construction, and bussing of Army personnel to and from the demolition sites for training activities. There would be a long-term major adverse effect on the transportation infrastructure of FAPH with the requirement to construct a bypass road to access the future BAX facility. The effects on railway, air, or public transportation at Fort A.P. Hill would be negligible.

3.11 Utilities

3.11.1 Affected Environment

Utilities available at the proposed relocated EOD demolition area are electricity and telephone.

3.11.1.1 Potable Water Supply

The groundwater system below Fort A.P. Hill is the sole source of potable water for the installation. The potable water infrastructure nearest to the proposed EOD demolition area is a well with a 100,000-gallon tank at Cooke Camp (Knight 2008) (Figure 3-6). The distance from Cooke Camp to the proposed demolition site is about 5 miles along roads. The potable water system on Fort A.P. Hill is owned, operated, and maintained by American Water O&M, Inc.

3.11.1.2 Sewer and Wastewater

The proposed EOD demolition site area has no wastewater infrastructure.

3.11.1.3 Energy Sources

Electricity

The electric distribution system at Fort A.P. Hill is privately owned and operated by Rappahannock Electric Cooperative, which performs all capital improvements and maintenance. The existing electrical distribution system to support the proposed EOD demolition area consists of overhead electrical lines running along North Range Road and the existing DS 70A range road.

Natural Gas

There is no natural gas in the vicinity of the proposed EOD demolition area (Knight 2008).

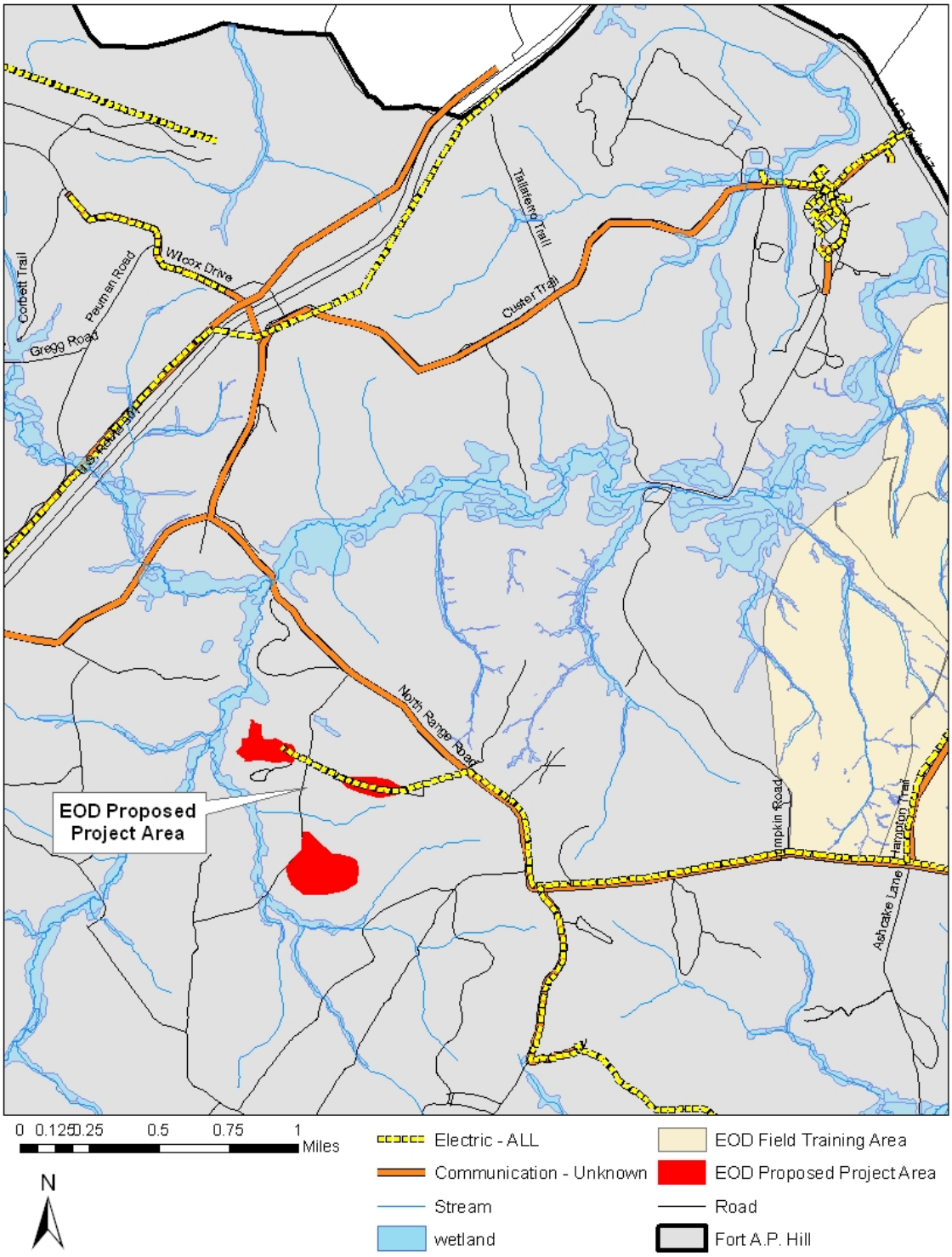
3.11.1.4 Storm Water Collection System

Storm water at the proposed EOD demolition area at Fort A.P. Hill infiltrates the soil or travels over ground in natural drainageways. There is no existing constructed storm water infrastructure.

3.11.1.5 Solid Waste

Solid waste collected at Fort A.P. Hill is transported to the King George Landfill in Virginia once or twice a day depending on the amount of troop training. Construction and demolition (C&D) debris is considered the property of individual contractors and is mostly disposed of in local landfills.

Figure 3-6 Utilities



3.11.1.6 Communication Systems

Communication services at Fort A.P. Hill are owned and operated by the installation. There are two outdoor phones on the proposed EOD demolition range area (Fort A.P. Hill GIS 2009). The existing telephone infrastructure runs along North Range Road and the access road to DS 70A.

3.11.2 Environmental Consequences

3.11.2.1 Proposed Action

Negligible effects on landfill capacity would be expected from the disposal of minor amounts of solid waste from construction. No effects on potable water reserves in the region, the sewer and wastewater system, the electrical system, communication systems, and the storm water system would be expected.

Potable Water Supply

No effect on the potable water supply at Fort A.P. Hill would result from the proposed action. No potable water systems are proposed to be installed to serve the EOD demolition area.

Sewer and Wastewater

No effect on sewer and wastewater at Fort A.P. Hill would result from the proposed action. No sewer or wastewater systems are proposed to be installed to serve the EOD demolition area.

Energy Sources

Electrical power

No effects on the electrical system of Fort A.P. Hill would be expected. Activities at the proposed EOD demolition would consume very little electrical power, and the system currently in place is of sufficient capacity to meet the demand of the proposed Project Area.

Natural gas

No effect on natural gas at Fort A.P. Hill would result from the proposed action. No natural gas system is proposed to be installed to serve the EOD demolition area.

Storm Water Collection System

No effect on the storm water collection system would be expected. Storm water would continue to infiltrate the ground and flow through natural drainageways.

Solid waste

Negligible effects on landfill capacity would be expected from the disposal of minor amounts of solid waste from construction. Solid waste would be generated from building construction of the pits and bunkers at D1, D2 and D3.

Communication Systems

No effects on the communications system of Fort A.P. Hill would be expected. The system currently in place at the proposed Project Area is of sufficient capacity to meet the demand.

Best Management Practices

BMPs required as part of DoD and Fort A.P. Hill policy and the Commonwealth of Virginia, examples of which are provided below, would adequately limit the adverse impact of the proposed action on utilities.

- ***Solid Waste.*** Recycle 50 percent of the construction and demolition (C&D) debris as stipulated in an Army memorandum (ACSIM 2006). Incorporate recycling requirements into all contracts awarded to outside contractors.

Cumulative Effects

Minor adverse cumulative effects on regional utility systems would be expected from construction under the proposed action, the AWG training range complex, the NSWECE, and other potential future projects. Utility system upgrades would be required most new ranges, and some C&D debris would be generated by each project. Minor additional demands on regional utility systems and minor reductions in regional landfill capacity would result.

3.11.2.2 No Action Alternative

Incorporation. This SEA incorporates by reference the utilities discussion related to the 2,059-acre EOD training area contained in the Environmental Assessment of Constructing and Operating an Explosive Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia. Specific information is provided below.

Short- and long-term minor beneficial and adverse effects on utilities in the proposed 2,059-acre EOD training area would be expected from implementation of the No Action Alternative. Renovations and upgrades would be required for utility systems (water, wastewater, storm water, communications, and electricity) at the proposed 2,059-acre EOD training area, which could result in minor service interruptions.

Solid waste generated by student Soldiers and instructors during classes held at the proposed 2,059-acre EOD training area would be minimal and would be removed by either Fort A.P. Hill Directorate of Public Works personnel or solid waste contractors.

3.12 Hazardous and Toxic Materials

3.12.1 Affected Environment

Specific environmental statutes and regulations govern hazardous material and hazardous waste management activities at the proposed EOD demolition project area at Fort A.P. Hill. For the purpose of this analysis, the terms *hazardous waste*, *hazardous materials,* and *toxic substances* include those substances defined as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act, Resource Conservation and Recovery Act, and Toxic Substances Control Act. In general, they include substances that, because of their quantity, concentration, or physical, chemical, or toxic characteristics, might present substantial danger to public health or welfare or to the environment when released into the environment.

3.12.1.2 Hazardous Materials/Wastes

Fort A.P. Hill is a RCRA Large Quantity Generator of hazardous wastes and a former Transportation, Storage, and Disposal facility. The installation's EPA Comprehensive Environmental Response, Compensation, and Liability Information System—or CERCLIS—identification number is VA2210020416. Hazardous wastes are managed by the Fort A.P. Hill Directorate of Public Works in accordance with the *Installation Hazardous Waste Management/Waste Minimization Plan.* Hazardous materials are managed through the Hazardous Materials Management Program, which includes all installation activities, tenants, and contractors working at Fort A.P. Hill. Through the use of a Hazardous Substance Management System database, all hazardous materials procured, stored, or used on the installation are tracked from cradle to grave. The program also allows for the return of unused or partially used hazardous materials for reissue to other activities.

The RCRA Military Munitions Rule defines waste as it applies to three specific categories of military munitions—unused munitions, munitions being used for their intended purpose, and used or fired munitions. The rule conditionally exempts (1) from RCRA manifest requirements and container marking requirements, waste non-chemical military munitions that are shipped from one military-owned or operated treatment, storage, or disposal facility to another in accordance with DoD military munitions shipping controls; (2) from RCRA Subtitle C storage regulations, waste non-chemical military munitions subject to the jurisdiction of the DoD Explosives Safety Board storage standards.

Military munitions are not a solid waste for regulatory purposes when a munition is being used for its intended purpose, which includes a munition being used for the training of military personnel; when a munition is being used for research, development, testing, and evaluation; when a munition is destroyed during range clearance operations at active and inactive ranges; and when a munition that has not been used or discharged, including components thereof, is repaired, reused, recycled, reclaimed, disassembled, reconfigured, or otherwise subjected to materials recovery activities.

This rule also specifies that used or fired munitions are solid waste when they are removed from their landing spot and then managed off-range (i.e., when transported off-range and stored, reclaimed, treated, or disposed of) or disposed of (i.e., buried or land-filled) on-range. In both cases, when the used or fired munition is a solid waste, it is potentially subject to regulation as a hazardous waste (USEPA 1997).

3.12.1.3 Ordnance

Historically, the area proposed for the EOD Project Area has been used for live demolition training.

3.12.2 Environmental Consequences

3.12.2.1 Proposed Action

Long-term minor adverse effects could result from an increase in the use of hazardous materials. The volume of these wastes generated and the amount of storage required would increase. Hazardous materials would be managed in accordance with the installation's *Hazardous Materials Management Program.*

Long-term minor adverse effects could result from an increase in the small amounts of chemical residues that remain in the soil after an explosives training exercise. Monitoring and reporting of soil and groundwater conditions are not required while the training area is being used for its intended purpose. Other explosives residue, such as spent shock tubes, igniters, and packaging material, would be recovered in accordance with DoD policy.

Short-term negligible adverse effects could result from an increase in spills associated with the use of hazardous materials during facility construction. Established controls such as spill containment, emergency response, and cleanup procedures would limit the impact of spills.

No effects would be expected from hazardous waste disposal. All hazardous wastes would be managed in accordance with the installation's *Hazardous Waste Management Plan* and RCRA requirements. Target vehicles (salvaged cars, trucks and vans) would go through an inspection process to ensure that no fluids or batteries were in the vehicles before being used for explosives training. After a target vehicle was no usable for training purposes, range personnel would inspect the vehicle to ensure that no residue remained in the vehicle before permitting its permanent disposal.

No adverse effects from the historical uses of area would be expected. Site workers will be trained in ordnance awareness and permits for intrusive activities would likely be required. If ordnance is identified during construction, only qualified Army personnel will respond.

Best Management Practices

BMPs required as part of DoD and Fort A.P. Hill policy and the Commonwealth of Virginia, examples of which are provided below, would adequately limit the adverse impact of the proposed action on hazardous and toxic materials.

- ***Contamination.*** Any soil suspected of contamination, or wastes that are generated, would be tested and disposed of in accordance with applicable federal and state laws and regulations.
- ***Pollution Prevention.*** The Army would implement pollution prevention and waste minimization programs, including reduction of waste materials at the source, reuse of materials, and recycling of solid wastes. Hazardous waste generation would be minimized, and all hazardous wastes would be handled appropriately.
- ***Remediation.*** The Army would honor all CERCLA obligations at active and closed Installation Restoration Program sites at the installation. The installation's remedial project manager would be contacted before any land, soil, or groundwater disturbance at or near ERP sites to ensure that all remedies in place would remain intact and that long-term monitoring wells would not be disturbed.

- ***Petroleum Contamination.*** If petroleum contamination was discovered during project excavation, the incident would be reported to the applicable state agencies. Any contaminated soils and groundwater would be disposed of in accordance with applicable state guidelines. Petroleum spills would be reported to the state as required.

Cumulative Effects

No cumulative effects on hazardous or toxic materials would be expected. All use, storage, and disposal of hazardous materials for all concurrent and future projects would be required to be conducted in accordance with the Fort A.P. Hill *Hazardous Waste Management Plan*.

3.12.2.2 No Action Alternative

Incorporation. This SEA incorporates by reference the hazardous and toxic materials discussion related to the 2,059-acre EOD training area contained in the Environmental Assessment of Constructing and Operating an Explosive Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia. Specific information is provided below.

Long-term minor adverse effects could result from an increase in the use of hazardous materials and an increase in storage capacity requirements for petroleum, oil, and lubricants. New storage facilities would be constructed and maintained in accordance with applicable laws regarding construction materials, leak protection, monitoring, and spill containment. No adverse effects would be expected from hazardous waste disposal, unexploded ordnance (or munitions and explosives of concern), or pesticides.

3.13 Cumulative Effects Summary

Minor adverse cumulative effects on the noise environment and regional utility systems would be expected. None of the adverse cumulative effects would be significant. Minor beneficial cumulative effects on economic development would be expected. No cumulative effects on land use, aesthetic and visual resources, air quality, geology or soils, water resources, biological resources, cultural resources, transportation resources, or hazardous or toxic materials would be expected.

SECTION 4.0
CONCLUSIONS

This SEA was prepared to evaluate the potential effects on the natural and human environment from activities associated with the proposed action to relocate three EOD demolition ranges from the EOD field training area. A No Action Alternative is also evaluated.

The SEA evaluates potential effects on land use, aesthetic and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics (including environmental justice and protection of children), transportation, utilities, and hazardous and toxic substances.

Evaluation of the proposed action indicates that the physical and socioeconomic environments at Fort A.P. Hill would not be significantly affected. The predicted consequences of implementing the proposed action on resources are briefly described below. Table 4-1 provides a summary and comparison of the consequences of the proposed action and the No Action Alternative.

4.1 Proposed Action Summary of Consequences

4.1.1 Land Use

No adverse effects on surrounding land use northeast and east of the installation would be expected. The proposed relocated EOD demolition site area is an already existing demolition range within the restricted area of the installation. Using the area for demolitions training would be compatible with the current land use.No changes to land use classifications on or off Fort A.P. Hill would result. No effects on regional land use planning or zoning at Fort A.P. Hill would be expected.

4.1.2 Aesthetic and Visual Resources

No adverse effects on the aesthetic and visual environment would be expected. The proposed relocated EOD demolition ranges would continue to be used and maintained for military training.

4.1.3 Air Quality

Short- and long-term minor adverse effects on air quality would be expected, primarily from non-road vehicle exhaust and fugitive dust emissions during construction and demolition activities. The proposed action would not cause or contribute to a violation of any federal, state, or local air regulation, nor would it contribute to a violation of Fort A.P. Hill's air operating permit.

4.1.4 Noise

Short- term minor adverse and long-term minor beneficial effects on the noise environment would be expected. The minor adverse effects would be primarily due to heavy equipment noise during construction. The long-term minor beneficial effects on the noise environment would be from the operation of the proposed relocated EOD range from the existing conditions.

Table 4-1
Summary of Potential Environmental and Socioeconomic Consequences

	Environmental and socioeconomic effects of alternatives	
Resource	**Proposed Action**	**No Action**
Land use	No effects	Long-term minor adverse
Aesthetic and visual resources	No effects	No effects
Air quality	Short- and long-term minor adverse	Short- and long-term minor adverse
Noise	Short- term minor adverse and long-term minor beneficial	Short- and long-term minor adverse
Geology and soils	Short- and long-term minor adverse	Short- and long-term minor adverse
Water resources		
• Surface water	Short-term minor and long-term negligible adverse	Short-term minor and long-term negligible adverse
• Hydrogeology/Groundwater	Long-term negligible adverse	Long-term negligible adverse
• Floodplains and Wetlands	Long-term minor adverse	Long-term minor adverse
• Coastal zone management	No effects	No effects
Biological resources	Long-term minor adverse	Long-term minor adverse
Cultural resources	No effects	No effects
Socioeconomics		
• Economic Development	Short- and long-term minor beneficial	Short- and long-term minor beneficial
• Housing	No effects	No effects
• Public services	Long-term minor adverse	Long-term minor adverse
• Schools, family services	No effects	No effects
• Environmental justice	No effects	No effects
• Protection of children	No effects	No effects
Transportation	Short- and long-term minor adverse	Short- term minor and long-term major adverse
Utilities	Short- and long-term minor beneficial and adverse	Short- and long-term minor beneficial and adverse
Hazardous and toxic substances	Short-term negligible and long-term minor adverse	Short-term negligible and long-term minor adverse

4.1.5 Geology and Soils

Short- and long-term minor adverse effects on soils would occur during construction and operation of the proposed EOD demolition range area. In the short-term, vegetation removal during construction activities would temporarily expose soils and potentially increase soil erosion. In the long-term, explosives training would result in soil disturbance at detonation sites.

4.1.6 Water Resources

Short-term minor and long-term negligible and minor adverse effects on water resources would be expected. Construction and operational activities could increase runoff; increase soil disturbance, erosion, and compaction; and increase sediment and pollutant loads. The proposed facilities would be sited to avoid sensitive environmental areas, including RPAs, to the maximum extent practicable. Wetlands and surface waters would be protected from development impacts or, where unavoidable, Fort A.P. Hill would minimize impacts to the resources by using Virginia-approved BMPs, and, if necessary, adhering to all

conditions of permits issued by the U.S. Corps of Engineers and VDEQ. No adverse effects on the Chesapeake Bay or the Virginia CZMP would be expected.

4.1.7 Biological Resources

Long-term minor adverse effects on biological resources would be expected from implementation of the proposed action. It is anticipated that of the 42 acres in the proposed EOD demolition site area, about 10 acres of land would be cleared for an access road and for D1 demolition pit and bunker. Sites D2 and D3 are already cleared and operating as live-fire ranges. The clearing at D1 would be expected to increase edge species of vegetation and could create favorable conditions for invasive or exotic species to establish themselves. The sites would be monitored for invasive and exotic species of concern, however, and overall the effect on the installation's vegetation would be minor.

No population-level effects on any animal species would be expected. Wildlife species would be protected through adherence to the Fort A.P. Hill INRMP, protected species management plans, and special area management plans during development and operation of the proposed EOD demolition range area. No adverse effects on sensitive animal or plant species would be expected from implementation of the proposed action.

4.1.8 Cultural Resources

No adverse effects on cultural resources at Fort A.P. Hill would be expected. Compliance with applicable federal legislation, the installation's ICRMP, and the installation's PA would ameliorate any unanticipated effects on cultural resources to less than significant.

4.1.9 Socioeconomics

Short- and long-term minor beneficial effects on economic development would be expected from expenditures to construct and operate the range facilities and the associated increases in sales volume, employment, and income in the ROI. Economic benefits also could result from timber sales. No effects on housing would be expected. Long-term minor adverse effects on medical services would be expected due to an increased response time to the EOD area, if a second medical crew were not acquired to augment the installation's existing one medical crew. No adverse effects on police or fire services, schools, other services and recreation facilities, environmental justice, or protection of children would be expected.

4.1.10 Transportation

Short- and long-term minor adverse effects on vehicle-based transportation resources at Fort A.P. Hill would be expected from using on-road construction vehicles during the periods of construction, bussing Army personnel to and from Fort A.P. Hill for training activities, and long-term operational activities on the proposed enlarged EOD field training area. No effects on railway and air transportation systems would be expected, and effects on the public transportation system would be negligible.

4.1.11 Utilities

Negligible effects on landfill capacity would be expected from the disposal of minor amounts of solid waste from construction. There would be no effects on the sanitary sewer system, the electrical system, the natural gas system, potable water reserves, the storm water collection system, or communication systems.

4.1.12 Hazardous and Toxic Substances

Short-term negligible and long-term minor adverse effects could occur. Long-term minor adverse effects could result from an increase in the use of hazardous materials. The volume of these wastes generated and the amount of storage required would increase. Long-term minor adverse effects could result from an increase in the small amounts of chemical residues that remain in the soil after an explosives training exercise. Other explosives residue, such as spent shock tubes, igniters, and packaging material, would be recovered in accordance with DoD policy. Short-term negligible adverse effects could result from incidental spills associated with the use of hazardous materials during facility construction. No environmental or health effects resulting from the testing, removal, handling, and disposal of hazardous materials would be expected during demolition or renovation activities. No effects would be expected from hazardous waste disposal; an increase in storage capacity requirements for petroleum, oil, and lubricants; the historical uses of the proposed EOD demolition range; or from pesticides.

4.1.13 Cumulative Effects

Minor adverse cumulative effects on the noise environment and regional utility systems would be expected. None of the adverse cumulative effects would be significant. Minor beneficial cumulative effects on economic development would be expected. No cumulative effects on land use, aesthetic and visual resources, air quality, geology or soils, water resources, biological resources, cultural resources, transportation resources, or hazardous or toxic materials would be expected.

4.1.14 Mitigation

Mitigation actions are used to reduce, avoid, or compensate for significant adverse effects. The SEA did not identify the need for any mitigation measures associated with implementation of the proposed action.

4.2 No action Alternative Summary of Consequences

Incorporation. This SEA incorporates by reference the discussion of effects related to the 2,059-acre EOD training area contained in the Environmental Assessment of Constructing and Operating an Explosive Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia. Specific information is provided below.

4.2.1 Land Use

A long-term minor adverse effect on surrounding land use would be expected. Noise from explosions could create an incompatibility with nearby residential areas. No impacts on installation land uses would be expected.

4.2.2 Aesthetic and Visual Resources

No adverse effects on the visual environment would be expected.

4.2.3 Air Quality

Short- and long-term minor adverse effects on air quality would be expected from vehicle and fugitive dust emissions during facility construction and from operational emissions attributable to generators,

boilers, and other internal combustion sources. No violations of federal, state, or local air regulations or Fort A.P. Hill's air operating permit would be expected.

4.2.4 Noise

Short- and long-term minor adverse effects on the noise environment at Fort A.P. Hill would be expected. The effects would be due to heavy equipment noise during construction and the operation of a 2,059-acre EOD area.

4.2.5 Geology and Soils

Short- and long-term minor adverse effects on soils would be expected. No effects on geology, topography, or prime farmland soils would occur. All disturbed areas would be stabilized and revegetated before construction activities were completed. Erosion control measures would be implemented in accordance with an erosion and sediment control plan developed for the project to control soil loss during construction and operation of the demolition range.

4.2.6 Water Resources

Short-term minor and long-term negligible adverse effects on surface water and groundwater quality would be expected. Construction and operation of facilities could increase runoff and increase soil erosion and sediment and pollutant loads in storm water runoff. Proposed facilities would be sited to avoid sensitive environmental areas, such as riparian areas and wetlands, to the maximum extent practicable.

4.2.7 Biological Resources

Long-term minor adverse effects on vegetation and wildlife would be expected. Site clearing and construction of facilities would require some vegetation removal, long-term conversion of small areas from forest to open areas and roads, and short- or long-term displacement of local wildlife. Sensitive habitats would be avoided. The wildlife in the area is currently exposed to high noise levels from demolition and training and should be accustomed to the noise levels. No impacts on wetlands would be expected. Fort A.P. Hill has a policy to protect all wetlands and streams by maintaining 100-foot buffers around such areas.

4.2.8 Cultural Resources

No significant impacts on historic properties at Fort A.P. Hill would be expected. Compliance with applicable federal legislation, procedures in the installation’s ICRMP, and the BRAC PA would ameliorate any unanticipated effects to less than significant.

4.2.9 Socioeconomics

Long-term minor beneficial effects on economic development would be expected. A long-term minor adverse effect on medical services would be expected from long travel times from the installation’s medical center to the proposed EOD training area. An additional medical crew could be needed. No effects on housing, law enforcement, fire protection, schools, family support, services, recreation, environmental justice, or the protection of children would be expected.

4.2.10 Transportation

Short- term minor and long-term major adverse effects on vehicle-based transportation resources at Fort A.P. Hill would be expected from using on-road construction vehicles during the periods of construction. There would be a long-term major adverse effect on the transportation infrastructure of FAPH with the requirement to construct a bypass road to access the future BAX facility. The effects on railway, air, or public transportation at Fort A.P. Hill would be negligible.

4.2.11 Utilities

Long-term minor beneficial and negligible adverse effects on utilities would be expected. Renovations and upgrades would be required for utility systems (water, wastewater, storm water, communications, and electricity), which could result in minor service interruptions. Utility system demands expected under the No Action Alternative would be nearly identical to those expected under the Preferred Alternative. Solid waste generated by student Soldiers and instructors during classes held at the proposed EOD training area would be minimal and would be properly disposed.

4.2.12 Hazardous and Toxic Substances

Short-term negligible and long-term minor adverse effects could occur. Long-term minor adverse effects could result from an increase in the use of hazardous materials. The volume of these wastes generated and the amount of storage required would increase. Long-term minor adverse effects could result from an increase in the small amounts of chemical residues that remain in the soil after an explosives training exercise. Short-term negligible adverse effects could result from incidental spills associated with the use of hazardous materials during facility construction. No environmental or health effects resulting from the testing, removal, handling, and disposal of hazardous materials would be expected during demolition or renovation activities. No effects would be expected from hazardous waste disposal; an increase in storage capacity requirements for petroleum, oil, and lubricants; the historical uses of the proposed EOD training area; or from pesticides.

4.2.13 Cumulative Effects

Minor adverse cumulative effects on surrounding land use, the noise environment, and regional utility systems would be expected. Minor beneficial cumulative effects on economic development would be expected. None of the adverse cumulative effects would be significant. No cumulative effects on aesthetic and visual resources, air quality, geology or soils, water resources, biological resources, cultural resources, transportation resources, or hazardous or toxic materials would be expected.

4.2.14 Mitigation

Mitigation actions are used to reduce, avoid, or compensate for significant adverse effects. The SEA did not identify the need for any mitigation measures associated with implementation of the No Action Alternative.

4.3 Conclusions

On the basis of the analyses performed in this SEA, implementing the proposed action would have no significant direct, indirect, or cumulative effects on the quality of the natural or human environment. Preparation of an Environmental Impact Statement is not required. Issuance of a FNSI is appropriate.

SECTION 5.0
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APPENDIX A

AGENCIES AND INDIVIDUALS CONSULTED

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APPENDIX B

COASTAL ZONE CONSISTENCY DETERMINATION

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Coastal Zone Management Act (CZMA) Consistency Determination

for the Relocation of Three Demolition Sites at the Explosives Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia

This document provides the Commonwealth of Virginia with the Fort A.P. Hill (FAPH) Consistency Determination under CZMA section 307(c) (1) and 15 CFR Part 930, sub-part C, for implementation of the proposed action described below. The information in this Consistency Determination is provided pursuant to 15 CFR section 930.39.

[The following paragraphs of text summarize the proposed federal activity. A full description of the proposed activity may be found in the Supplemental Environmental Assessment (SEA) for the Relocation of Three Demolition Sites at the Explosives Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia, *which is incorporated by reference into this Consistency Determination]*.

This federal Consistency Determination identifies consistency with state and federal CZMA regulations in evaluating the relocation of three demolition sites at the explosives ordnance disposal (EOD) field training area at Fort A.P. Hill, Virginia. On May 11, 2007, the Army issued its Record of Decision (ROD) for the *Final Environmental Impact Statement: Implementation of Base Realignment and Closure (BRAC) Recommendations and Other Army Actions at Fort Lee, Virginia, and Fort A.P. Hill, Virginia.* Among the facilities evaluated in the environmental impact statement (EIS) was establishing an EOD field training area that would cover approximately 1,034 acres at FAPH. Since publication of the ROD, ongoing planning by the Army revealed the need for additional area in the EOD project site. The *Final Environmental Assessment of Constructing and Operating an Explosives Ordnance Disposal Field Training Area at Fort A.P. Hill, Virginia* (July 2008) evaluated the Army's proposal for expanding the planned EOD field training area by adding an additional 1,025 acres resulting in the construction and operation of a contiguous EOD field training area of approximately 2,059 acres.

The Army proposes to relocate the three demolition sites (D1, D2 and D3) originally designed for the 2,059 acre EOD field training area within Training Areas 26, 27 and 28 of Fort A.P. Hill. These three demolition sites would be relocated to demolition site 70A (DS 70A), an already existing demolition range within the restricted area at Fort A.P. Hill, Virginia. The footprint of the existing DS70A is large enough to accommodate all three demolition sites (D1, D2 & D3) proposed for construction at the EOD field training area.

The purpose of the proposed action is to provide unrestricted access to the proposed Battle Area Complex (BAX) while providing unconstrained training for the EOD field training area.

Consistency Determination

The Virginia Coastal Zone Management Program (CZMP) contains the applicable enforceable policies presented in the left column of the table in the following pages. The Army has determined that the implementation of the proposed action would have no effects on the land or water uses or natural resources of Virginia as described in the right column of the table.

Based upon the information, data, and analysis, as contained in the EA, the Army finds that the proposed action is consistent to the maximum extent practicable with the enforceable policies of the Virginia CZMP. Pursuant to 15 CFR section 930.41, the Virginia CZMP has 60 days from the receipt of this document in which to concur with or object to this Consistency Determination, or to request an extension under 15 CFR section 930.41(b). Virginia's concurrence will be presumed if its response is not received by the Army on or before the 60th day from receipt of this determination. The Commonwealth of

Virginia's response should be sent to Ms. Terry Banks, Chief, Environmental Division, 19952 North Range Road, Fort A.P. Hill, Virginia, 22427.

Coastal Zone Management Act, Fort A.P. Hill Consistency Determination	
Applicable Enforceable Policy	**Effects of the Federally Proposed Action**
Fisheries Management The program stresses the conservation and enhancement of finfish and shellfish resources and the promotion of commercial and recreational fisheries to maximize food production and recreational opportunities. This program is administered by the Marine Resources Commission (VMRC) (Virginia Code '28.2-200 to '28.2-713) and the Department of Game and Inland Fisheries (VDGIF) (Virginia Code '29.1-100 to '29.1-570). The State Tributyltin (TBT) Regulatory Program has been added to the Fisheries Management program. The General Assembly amended the Virginia Pesticide Use and Application Act as it related to the possession, sale, or use of marine antifoulant paints containing TBT. The use of TBT in boat paint constitutes a serious threat to important marine animal species. The TBT program monitors boating activities and boat painting activities to ensure compliance with TBT regulations promulgated pursuant to the amendment. The VMRC, VDGIF, and Virginia Department of Agriculture and Consumer Services (VDACS) share enforcement responsibilities (Virginia Code '3.1-249.59 to '3.1-249.62).	**NO EFFECT** The proposed action would not involve building, dumping, or otherwise trespassing on or over, encroaching on, taking or using any material from the beds of the bays, ocean, rivers, streams, or creeks within Virginia. The proposed action would not have a reasonably foreseeable effect on fish spawning, nursery, or feeding grounds, and therefore none on fisheries management per the Virginia Marine Resources Commission and the Department of Game and Inland Fisheries. No paints containing Tributyltin will be used under this proposed action.
Subaqueous Lands Management The management program for subaqueous lands establishes conditions for granting or denying permits to use state-owned bottomlands based on considerations of potential effects on marine and fisheries resources, wetlands, adjacent or nearby properties, anticipated public and private benefits, and water quality standards established by the Department of Environmental Quality (VDEQ), Water Division. The program is administered by the Marine Resources Commission (Virginia Code '28.2-1200 to '28.2-1213).	**NO EFFECT** No subaqueous land use is proposed under this action. This project involves no encroachments in, on, or over state-owned submerged lands.
Non-point Source Pollution Control Virginia's Erosion and Sediment Control (ESC) Law requires soil-disturbing projects to be designed to reduce soil erosion and to decrease inputs of chemical nutrients and sediments to the Chesapeake Bay, its tributaries, and other rivers and waters of the Commonwealth. This program is administered by the Department of Conservation and Recreation (VDCR) (Virginia Code'10.1-560 et seq.). Also, construction activity of less than 1 acre but part of a common plan of development disturbing 1 or more acres and having the potential to discharge stormwater requires coverage under the Virginia Stormwater Management Program (VSMP) *General*	**NO EFFECT** The proposed action would require ground disturbance for facility construction. Fort A.P. Hill is developing an Integrated Storm Water Pollution Prevention Plan (SWPPP). Site-specific ESC plans that provide information relevant to each activity will be developed per the Virginia ESC law and regulations for EOD training areas. These plans will become temporary additions to the SWPPP for the duration of the activity. The SWPPP is being developed IAW the VSMP general construction permit, and a VSMP permit will be obtained for this project. Design and construction of a septic system or drain field would be coordinated with the Virginia

Coastal Zone Management Act, Fort A.P. Hill Consistency Determination	
Applicable Enforceable Policy	**Effects of the Federally Proposed Action**
Permit for Discharges of Stormwater for Construction Activities.	Department of Health.
Wetlands Management The purpose of the wetlands management program is to preserve tidal wetlands, prevent their despoilation, and accommodate economic development in a manner consistent with wetlands preservation. (i) The tidal wetlands program is administered by the Marine Resources Commission (Virginia Code §28.2-1301 through '28.2-1320). (ii) The Virginia Water Protection Permit program administered by the Department of Environmental Quality includes protection of wetlands --both tidal and non-tidal. This program is authorized by Virginia Code § 62.1-44.15.5 and the Water Quality Certification requirements of Section 401 of the Clean Water Act of 1972.	**NO EFFECT** The proposed action would not affect any tidal wetlands at Fort A.P. Hill. It is unlikely that the proposed action would require a Virginia Water Protection (VWP) Permit as it does not propose to conduct any of the following activities in a wetland: 1. New activities to cause draining that significantly alters or degrades existing wetland acreage or functions. 2. Filling or dumping. 3. Permanent flooding or impounding. 4. New activities that cause significant alteration or degradation of existing wetland acreage or functions. During the course of the proposed action, however, if it were to become evident that an impact would occur, then the installation would apply for a VWP permit prior to commencing the activity. Additionally, the installation would prepare and adhere to an Erosion and Sediment Control Plan to prevent sedimentation from entering surface waters (see non-point source pollution control section below).
Dunes Management Dune protection is carried out pursuant to The Coastal Primary Sand Dune Protection Act and is intended to prevent destruction or alteration of primary dunes. This program is administered by the Marine Resources Commission (Virginia Code '28.2-1400 through '28.2-1420).	**NO EFFECT** No permanent alteration of or construction upon any coastal primary sand dune will take place under the proposed action.
Point Source Pollution Control The point source program is administered by the State Water Control Board pursuant to Virginia Code '62.1-44.15. Point source pollution control is accomplished through the implementation of the National Pollutant Discharge Elimination System (NPDES) permit program established pursuant to Section 402 of the federal Clean Water Act and administered in Virginia as the Virginia Pollutant Discharge Elimination System (VPDES) permit program.	**NO EFFECT** American Water O&M, Inc., is now the permittee for the wastewater treatment plant at Fort A.P. Hill. Fort A.P. Hill has a petroleum, oil, and lubricants (POL) industrial general permit. Permittees would work with VDEQ to revise the permits as necessary as the proposed action was implemented, and Fort A.P. Hill would adhere to all permit of its conditions.
Coastal Lands Management A state-local cooperative program administered by the Department of Conservation and Recreation's Division of Chesapeake Bay Local Assistance and 84 localities in Tidewater, Virginia, established pursuant to the Chesapeake Bay Preservation Act; Virginia Code §§ 10.1-2100 through 10.1-2114 and Chesapeake Bay Preservation Area Designation and Management Regulations; Virginia Administrative code 9 VAC10-20-10 et seq.	**NO EFFECT** Buffer areas of not less than 100 feet adjacent to and landward of the components listed in 9 VAC 10-20-80 Resource Protection Areas would be adhered to. Best management practices will be developed and implemented in accordance with the VSMP SWPPP. Applicable provisions of the Chesapeake Bay Preservation Act will be adhered to during all construction and operational activities..

Coastal Zone Management Act, Fort A.P. Hill Consistency Determination	
Applicable Enforceable Policy	**Effects of the Federally Proposed Action**
Shoreline Sanitation	**NO EFFECT**
The purpose of this program is to regulate the installation of septic tanks, set standards concerning soil types suitable for septic tanks, and specify minimum distances that tanks must be placed away from streams, rivers, and other waters of the Commonwealth. This program is administered by the Department of Health (Virginia Code '32.1-164 through '32.1-165).	Sanitation facilities at the EOD area would not be close to streams, rivers, or other waters of the Commonwealth, and no adverse effects on Commonwealth waters would result from use of the facilities.
Air Pollution Control	**NO EFFECT**
The program implements the federal Clean Air Act to provide a legally enforceable State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards. This program is administered by the State Air Pollution Control Board (Virginia Code '10-1.1300).	The estimated emissions from implementation of the proposed action would not exceed the *de minimis* threshold values. A conformity determination is not required and a Record of Non-applicability is in Appendix B of the SEA.

APPENDIX C
AGENCY CORRESPONDENCE

APPENDIX D
PUBLIC NOTICES/PUBLIC COMMENTS

APPENDIX E
ACRONYMS AND ABBREVIATIONS

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ACRONYMS AND ABBREVIATIONS

ADNL	A-weighted day-night average sound level
ACM	asbestos-containing material
a.m.	ante meridiem (before noon)
AQCR	Air-Quality Control Region
AQCR 224	Northeastern Virginia Intrastate Air-Quality Control Region
AWG	Asymmetrical Warfare Group
BMP	best management practice
BOQ	Bachelor Officers' Quarters
BRAC	Base Realignment and Closure
C&D	construction and demolition
CBPA	Chesapeake Bay Preservation Act
CDNL	C-weighted day-night average sound level
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	*Code of Federal Regulations*
CO	carbon monoxide
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Program
dB	decibel
dBA	A-weighted decibel
dBC	C-weighted decibel
dBP	peak level decibel
DNL	day-night average sound level
DoD	Department of Defense
EA	environmental assessment
EIFS	Economic Impact Forecast System
EIS	environmental impact statement
EO	Executive Order
EOD	Explosive Ordnance Disposal
EPA	U.S. Environmental Protection Agency
FAPH	Fort A.P. Hill
FEMA	Federal Emergency Management Agency
FNSI	Finding of No Significant Impact
GATOR	Global Antiterrorism Operational Readiness
GCR	General Conformity Rule
ICRMP	Integrated Cultural Resource Management Plan
INRMP	Integrated Natural Resource Management Plan
JERRV	Joint EOD Rapid Response Vehicles
lb, lbs	pound, pounds
LBP	lead-based paint
LEED	U.S. Green Building Council's Leadership in Energy and Environmental Design
MICLIC	Mine Clearing Line Charge
mm	millimeter
MOUT	Missions on Urban Terrain
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NEW	net explosive weight
NO_x	oxides of nitrogen

NRHP	National Register of Historic Places
NSR	New Source Review
NSWECE	Naval Special Warfare Explosive Center of Excellence
O_3	ozone
OMEMS	Ordnance Munitions and Electronic Maintenance School
PA	programmatic agreement
PCPI	per capita personal income
p.m.	post meridiem (afternoon)
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
ROI	region of influence
RPA	resource protection area
RTV	rational threshold value
SF	square foot/square feet
SHPO	State Historic Preservation Officer
SI	Farmland of Statewide Importance
SO_2s	ulfur dioxide
TNT	trinitrotoluene
VDCR	Virginia Department of Conservation and Recreation
VDEQ	Virginia Department of Environmental Quality
VSMP	Virginia Stormwater Management Plan

APPENDIX F

RECORD OF NON-APPLICABILITY

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